

THE
PRINCE CONSORT'S FARMS.

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THE
PRINCE CONSORT'S FARMS:

AN AGRICULTURAL MEMOIR.

BY

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DEDICATED, BY PERMISSION,

to

HER MOST GRACIOUS MAJESTY

THE QUEEN.

The writer of the following pages, which relate the agricultural career of a Wise Prince and an Illustrious Man, cannot lay down his pen without expressing here his humble and grateful acknowledgments to Her Most Gracious Majesty the Queen, who has permitted this agricultural memoir of His Royal Highness the Prince Consort, and has graciously accepted the Dedication of the Work.

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THE PRINCE CONSORT'S FARMS.



THERE is no department of British industry which has maintained a steadier progress than has latterly been witnessed in our Agriculture—none which has achieved more obvious improvement and success during the happy reign of Queen Victoria. Within the past twenty years the agriculturist has benefited by scientific research, by mechanical ingenuity, by extended resources, and by increasing skill, more than during any similar period in our history. Fertility has been increased by the operation of new processes and of new implements, by the importation and the manufacture of new manures, by the cultivation of new plants, by the maintenance of a larger stock of improved animals. National Societies have stimulated and directed improvement by publishing both failures and successes; and we have now from agriculturists and from scientific men abundant records and satisfactory explanations of every branch and kind of agricultural experience. Since 1840, the date of Liebig's celebrated work, agricultural chemistry, by which farm processes and results are explained, has risen to

the rank of science ; agricultural mechanics have almost entirely altered the machinery by which these processes are effected ; and an agricultural literature describing, justifying, urging all these changes has during this period been created.

To what do we owe an alteration and advance so great ? For the most part, doubtless, to the increasing wealth and number of the population. On the welfare of consumers depends the prosperity of producers ; and when, as in the case before us, the increasing numbers and necessities of the former class have to be supplied from a limited area of production, the ingenuity and energy of the latter class are necessarily urged to the utmost. It is thus that agriculturists have shared in both the promotion and the advantages of national prosperity. Their efforts have been stimulated, because rewarded, mainly by the profitable demand which has existed for a larger agricultural produce.

We claim, however, as due to other causes, much not only of the guidance but of the incentive also to which the recent great success of English agricultural industry must be attributed. No one can deny, because every county may be quoted for its illustrations, that the enterprise and public spirit of individual cultivators have often served most usefully to urge and lead the agricultural improvement of large surrounding districts. And everybody knows that, besides the leadership of great exemplars, the rivalry of brother farmers, excited by the

premiums of agricultural societies, has tended much to the improvement of farm practice.


Both of these considerations hold a leading place in an agricultural memoir of H.R.H. the Prince Consort. Among the many proofs that may be given at once of his devotion to his adopted country, and of the rare wisdom by which from the very outset of his career it was inspired, none impresses English farmers more than the energy and cordiality with which in both of these directions he laboured for the improvement of the first of English interests. Accustomed as His Royal Highness must have been to that system of external patronage for the promotion of agricultural progress which prevails in other countries, where a government subsidy is the solution of every difficulty in the way of schools and of societies, he nevertheless at once, on his arrival here, heartily accepted the English principle of unassisted combination for the attainment of the end desired. And, having entered the ranks of agriculturists as tenant of the royal farms, he united with them also in the membership of our great agricultural societies. Competing there as with brother farmers for the distinctions awarded to successful exhibitors, and exhibiting on his farms at home all the leading agricultural improvements of the day, he threw the whole weight of his position as the first of our fellow-countrymen into both of the leading means of agricultural improvement to which we have adverted. And

thus for one-and-twenty years, seizing every occasion of fresh effort, whether afforded by the establishment of new societies or by the introduction of new inventions, quietly, but heartily, and constantly, he laboured in the field of agricultural progress.

No wonder that the lamentable intelligence of his sudden death was received with especial grief by agriculturists. Sympathy with our widowed Queen, of itself enough to make a nation mourn, was in our case deepened by a sense of the immense loss which we too had sustained. The Prince Consort had chosen to be one of us, in a sense more intimate than even that in which he had become our fellow-countryman. Ours was the one industrial pursuit in which he could personally engage, and he was this year especially to have been our leader. He had accepted the Presidency of the National Agricultural Society; and we all looked forward to the recruited membership, the cordial cooperation, and the redoubled spirit and activity which, during the current year, were certain to ensue under the influence of his Name—under the influence of that life-long example which had made his name so powerful for good. For the election of the Prince was no mere compliment to rank—it was the fairly earned acknowledgement of a long and distinguished agricultural career. And the position was accepted doubtless as no mere formal condescension or distinction, but as enabling him to make one addition more to that long list of useful and laborious patriotic efforts for which the Prince's memory will be always held in grateful reverence. Alas! it was little

thought, when the Great International Exhibition at Kensington and that other great international gathering—the Exhibition of the Royal Agricultural Society at Battersea—were planned for 1862—it was little thought that in place of immediate leadership and guidance there would be but the memory of our Chief—but the remembrance of his wise counsels—the impulse from a Great Heart no longer beating here—to urge and guide to their conclusion plans which he had devised with such hopefulness, patriotism, and philanthropy. It has been, indeed, a grievous loss to us that when his wise and energetic patronage of all that is good and useful seemed, in its agricultural developement, about to bear its best and worthiest fruit—when, as President of the Royal Agricultural Society, he was about to infuse new life into this institution, as he had into so many others—all this prospect of a still more useful agricultural career should have vanished from us.

It is the purpose of this volume to place on record the particulars of his most useful agricultural life, and to describe those improvements in the practice of English agriculture which have been promoted by it, so that its influence may be retained. A written account may reach some who are unable personally to examine the estates, the operations, the results described; and thus it is sincerely hoped that these pages may in some humble degree contribute to the end which Her Most Gracious Majesty the Queen has desired by the commands which have been given for the maintenance of all those farms of which



His Royal Highness was the tenant, and of all those agricultural relations which he sustained.

In the four following sections, accordingly, under which the materials for this Memoir have been collected and arranged, there will be found—first, a description of the estates which had been purchased for the Royal Family during the lifetime of the Prince, and of the improvements which, under his directions, were effected in them—and, secondly, a corresponding description of the estates which were rented by his Royal Highness as a tenant-farmer. In the third chapter there is given an account of the Prince Consort's relations to the labourers on his own estates, and of his efforts on a wider field for the benefit of the labouring class in general. And the last division of the book, more directly biographical, is devoted to an enumeration of those events in his agricultural career by which the interest felt by him in the prosperity of English agriculture is so fully illustrated.

Besides the personal details which will be the chief attraction of these pages, there is also, it is hoped, much in them that will be professionally useful to the agriculturist. The experience which has to be described on such subjects as farm-buildings, land-drainage, steam-cultivation, tillage and manures, cattle-breeding, grass-land management, cottage-building, and farm accounts, is most valuable; and it is, we are glad to feel assured, quite in accordance with the public-spirited character of the Prince Consort that it should be published.



OSBORNE HOUSE

CHAPTER I.

THE ROYAL ESTATES.

THE above sketch represents the north-eastern front of OSBORNE HOUSE, which was erected by the late Mr. Thomas Cubitt from the designs of His Royal Highness the Prince Consort, during the years 1845-49. And the map on a following page shows the boundaries and divisions of the estate connected with it, which by successive purchases since that period has become the property of the Royal Family.

The manor of Osborne, formerly 'Auster burn' or 'East Bourne'—the northern portion of this estate—passed by mar-

riage in the reign of Henry VIII. with the heiress of the Bowerman family, its former proprietors; and after repeated changes in the ownership, it became, in the early part of the seventeenth century, the property of Mr. Blachford, of Sandhall, near Fordingbridge. His grandson built the mansion, 'one of the best on the island,' which stood within the Park when the estate was purchased for the Queen in 1845. The present House occupies the site of that mansion. It stands on the highest ground of the estate, at the head of a valley sloping eastwards towards Spithead—the royal standard thus appropriately floating within sight of one of the great centres of England's power, and one of her great channels of communication with foreign parts.

The House is built in the Palladian style, a three-storied building, in two principal portions, connected at the angles by a corridor. The northern wing, which contains the royal apartments, is in advance of the other, and thus commands pleasant home views on three of its sides, and a noble landscape, including the opposite coast of Hampshire, towards the north and east.

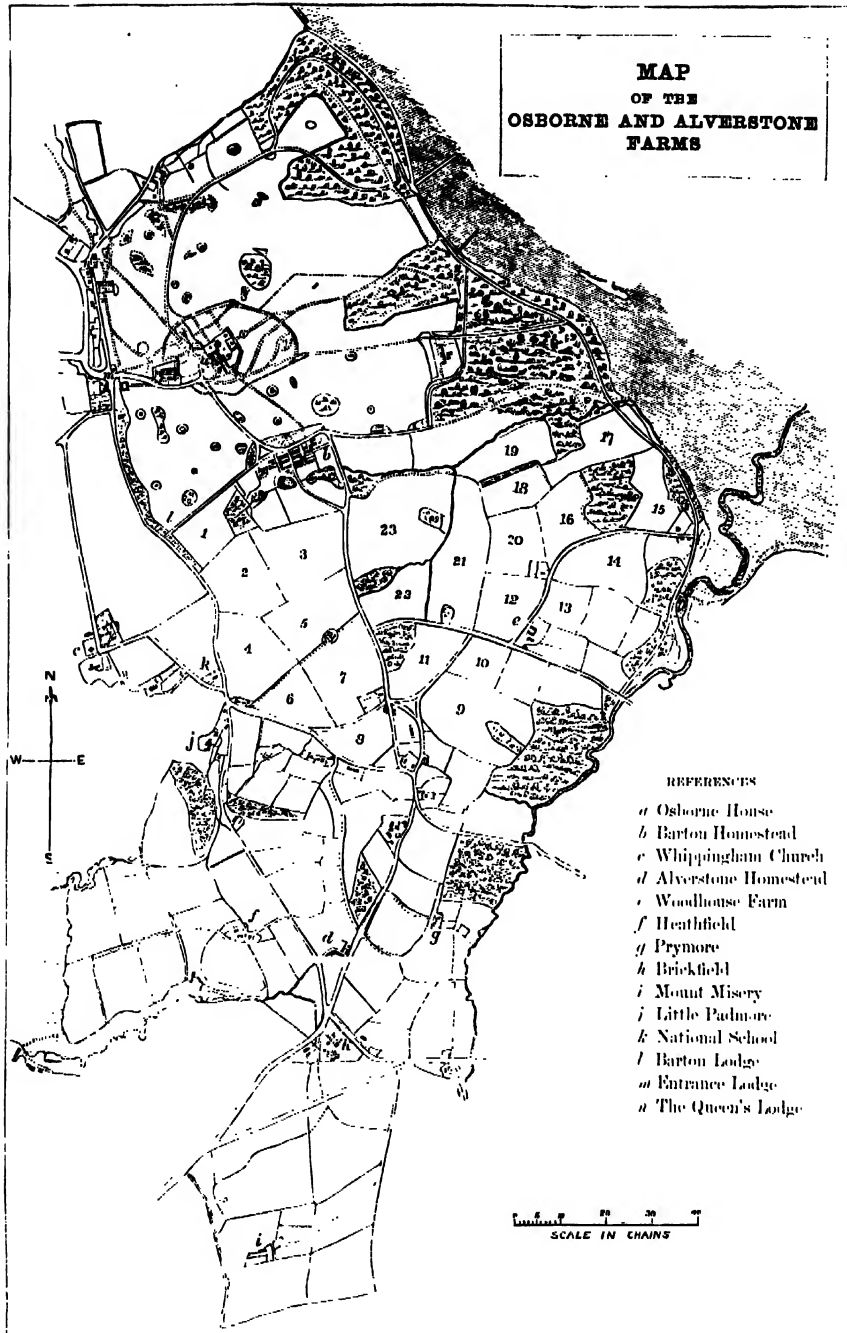
The manor of Barton lies to the south of the Park and House of Osborne. It is mentioned in Domesday Book as having been held of King Edward, and as having passed at the Conquest, by royal grant, to Norman ownership. An oratory of Augustines was established here in the thirteenth

century; and two centuries later it became the property of Winchester College, from whose trustees, in 1845, it was purchased for the Royal Family. The mansion, a substantial Elizabethan structure, has been since repaired, re-roofed, and in part rebuilt. It now contains suites of apartments for Her Majesty's use, for the royal attendants, and for the family of Mr. Andrew Toward, who has been the resident manager of all these estates since they became royal property. Connected with it stands the homestead of the Barton Farm, erected in 1852 from Mr. Toward's designs, and described in detail further on.

The northern end of the estate includes the Alverstone and Heathfield Farms, purchased in 1845 respectively from the Hon. A-Court Holmes (now Lord Heytesbury), and Mrs. Nash, widow of John Nash, Esq. On the former of these farms a new homestead has been erected. The latter remains in the occupation of the tenant who held it at the date of its purchase. With the exception of this portion, the whole of the land was in the occupation of the Prince Consort; and under his personal direction and superintendence during the past sixteen years, it has been very greatly altered and improved. How laborious and continuous the process has been may be gathered from the list and quantities of the principal operations—buildings, roads, drainage, planting—hardly yet completed. Upwards of 400 miles of covered drains have been dug on the estate—264 on the Osborne and Barton portion of it, and upwards

of 130 at Alverstone—and besides these many miles of open ditches have been made through the plantations.

The buildings have included new mansions, new farm buildings, new cottages and school, and a new church. A very great length of new roads has been made, including drives for upwards of twenty miles within the boundaries of the estate, commanding every variety of coast and woodland scenery. By a re-arrangement of the fields, the farms have been adapted to the best and newest modes of cultivation. A great deal of planting has been done, principally of elms and pines, as avenues; but large numbers, also, of rare *Coniferae*, as specimens, besides evergreens and shrubberies around the House. The estate thus now presents as striking an example as is anywhere to be seen of good land-management; so that in itself, as well as for its connection with the agricultural career of an illustrious man, it deserves the attention of agriculturists. The improvements thus effected in the property have been carried out, under the direction of His Royal Highness the Prince Consort, by Mr. Toward, to whom much of the substantial excellence and polish of its present condition is due. Nowhere are better roads to be seen; the fences are perfect illustrations of what fences ought to be; the land is divided by them into fields of useful and convenient size; these are drained, and cleanly, deeply cultivated by horse, and steam, and hand; and the homesteads are particularly well adapted for the good management of the



MAP OF THE OSBORNE ESTATE

live stock and the safety of the dead stock of the farm, and for the economical manufacture of meat and of manure.

Before describing these buildings, and the cultivation of these farms, it is right to refer more generally to the character of the property, and to describe some of the chief improvements which have been made in it. It will be seen from the Map that the Osborne estate occupies the height and eastern side of that promontory of land which lies between the Medina River at Cowes, and King's Quay on the north coast of the Isle of Wight. It now extends over a surface four miles long, and nearly two miles wide. The district is in geological maps coloured as belonging to the 'Headon Marlstone' and 'Binstead Freshwater' formations; but nearly all of it is obscured by a great depth of gravelly detritus, which again is covered by a soil everywhere more or less gravelly, but in some fields stiff and intractable, and in others light and loamy, according as the gravel is mixed with clay or sand. It is very seldom naturally a rich and fertile soil; generally, as proved by the character of the pastures and the stunted growth of the timber on the estate, it is naturally poor and infertile. This is especially the case on the Alverstone Farm, where there is a great deal of extremely rough pasture, and stiff, unmanageable ploughland, which has not yet been for so long a time subjected to those processes of improvement that have answered so well at Barton.

It must be understood, then, that this property is for the most part a high-lying tract of land, about 1810 acres in ex-

tent, of which nearly 600 acres are the Park around the House and between it and the sea, 400 acres are woodland, principally in woods around the Park, and 700 acres are arable, lying chiefly on the inland or southern side of the estate.

Walking from the Barton Homestead across the high land to the north of it, you come upon the edge of the valley at the head of which stands Osborne House; its terraces, gardens, woods, and the lines of its own fine architectural elevation, giving quite the impression of a palatial residence. Grassy slopes tend eastward from it valley-wise in the midst of woods on either side, over which the waters and the shipping of Spithead are visible.

Though occupying the site of the former mansion, and though surrounded now by well-clothed surfaces, whether terraces or slopes or shrubberies, there is very little of the original immediate neighbourhood of the House remaining. Ravines have been filled up, and overhanging knolls have been reduced, and an immense amount of earthwork had to be done before the plans of the Prince Consort were accomplished. The central promenade downwards through the valley is in some places over fifteen feet in depth of moved earth; and some of the terraced gardens laid out geometrically on the eastern front of the House must be over even greater depths than this. An artificial mound, now well-clothed with shrubs, lies on the northern side of the principal approach, and carries a tank for the supply of the fountains in the gardens—the water being retained by puddled

clay and cement alone—the success of what appeared at first a very doubtful operation, being a proof of the extreme tenacity of the clay thus removed. The walls and surfaces of the terraces on the eastern side of the House are covered with rare shrubs and flowering-plants; and it is a striking illustration at once of the mildness of the winters here and of the improvement in the inner climate of the soil produced by deep tillage and thorough drainage, that myrtles and camellias and magnolias blossom most profusely though kept throughout the year in open borders; that orange trees bloom and fruit in the open air, receiving shelter only now and then; and that the Chusan Palm (*Chamærops excelsa*), altogether unsheltered, survived the frosts of 1860-61. On the western side, where the public roads are nearest to the House, it is sheltered and hidden by plantations and scattered specimens of various evergreens, both trees and shrubs; including the evergreen Oak, the Bay and Portugal Laurel, the common Holly, the Deodar, *Pinus Austriaca* and *insignis*, *Thuja*, *Wellingtonia* and *Araucaria*. The Prince planted a great number of these trees himself; and not one was planted without his personal directions.

The whole of the grass land surrounding the House has, with the rest of the estate, been drained with pipes four feet deep, in lines generally seven yards apart.* The roads through

* We add here a memorandum of the cost and quantity per acre of drainage, varying from $3\frac{1}{2}$ to 4 feet deep, done upon the estate. Of that on the Barton Farm, in one instance, 506 perches of drainage on $4\frac{1}{2}$ acres—thus averaging $7\frac{1}{2}$ yards apart—cost 5*l.* 5*s.* per acre; and in another case, 938 perches on 9 acres, rather wider apart, in two pieces, cost 4*l.* 12*s.* 3*d.* and 5*l.* 8*s.* 6*d.* respectively.

it are simply 9 to 12 inch layers of broken stone and gravel, laid in properly cut out beds on this drained clay land. The gravel-pits upon the estate produce admirable road material, and while the roads accordingly are everywhere exceedingly well made, they have as a general rule been made without much difficulty. There is, however, at least one exception to this in a new road recently made along the steep shore and through the wood on the northern side of the Park. Rock and clay seem there mixed up so entirely without rule or systematic structure, that the deepest drains and the most perfect surface drainage combined with them, are unable to prevent the liability to slips in rainy weather. A sea-wall has been erected along half a mile or more of the shore, the top being laid out as a sea-side promenade, and it is across the bank above this portion of the shore that the road is led. Its line being for the most part over 'made' land, it will not be until a complete settlement and thorough drainage of the mass have been effected that the road can be looked upon as safe.

A new Pier and landing-house have been erected at the foot of the valley, at one end of the sea-wall just named; and from this, besides the carriage road, a footway leads directly up the valley to the House. On either side the slopes are pasture land, sprinkled with trees and crowned with woodland—occasional patches of gorse, left with great good taste.

At Alverstoke, 45 acres cost 4*l.* 4*s.* 6*d.* per acre for drainage in 1852, when labour was considerably cheaper than it is now. The land is for the most part on a clay subsoil.

showing the originally poor, uncultivated character of the place. Some sixty or seventy acres of grass land, immediately around the House, enclosed within wire fencing, are kept constantly cut with a horse-drawn lawn-mowing machine—which, after the first spring cutting has been accomplished with the scythe, and all the winter's worm-casts have been removed, is found to answer perfectly. Beyond these limits the grass is mown for hay or grazed with sheep and cattle.

At one spot it is the subject of an interesting experiment in the use of house-sewage. Looking across the valley in mid winter from the southern side, you see ten or fifteen acres of the land, below a certain line, green and growing in the midst of the generally bleached surface which poor grass land then exhibits. This is where the waste of the House is used in irrigation. The drains from the Mansion used formerly to be taken to the shore. This, however, created an almost constant nuisance at low water, and for this a remedy was sought—just as it is now sought for the nuisance which town sewage almost everywhere creates; and the success of the measures taken by the Prince at Osborne may perhaps be found a useful guide to efforts on a larger scale elsewhere. The original idea contemplated such a filtration of the sewage as should retain in compost with earth all the solid and most of the fertilising ingredients of the liquid portion, letting the bulk of the water thus treated run to waste in a perfectly deodorized and, as it was believed, purified and inert state. It is found,

however, that while the nuisance has thus been completely abated, so that the water which escapes is limpid and without smell, it nevertheless carries with it much soluble matter of use as manure; and thus many acres of land lying below the line along which it is discharged over the northern side of the valley, are greatly increased in productiveness and fertility. The filter, designed by the Prince, by which this result has been achieved ever since 1851, consists of a brick-built tank, thirty feet long and four feet deep and as much wide, divided into two equal parts by a wall across it which has a double structure, with an interval of six or eight inches between its parts. A similar double wall is provided at the end which receives the drainage of the house. Into the space within the first double wall the drains deliver their flow, which thus sinks to the bottom and passes through holes at the bottom into the inner tank. There it rises through three successive sets of trays each carrying two or three inches deep of mould, through which the water ascends to the surface of the first division of the tank. Thence it flows down the space within the second double wall, and in like manner rises through mould in the second half of the tank, which it ultimately leaves in an almost perfectly clear state and entirely without smell. This water is then conveyed, partly by open channel and partly by hose, to one point and another over ten or fifteen acres of land, being allowed to flow unguided for ten or twelve hours at a time at each spot. At intervals of two or three weeks the tank and its trays are cleaned

of all mud and sludge, and this is mixed with earth and forms a useful compost. The success of this scheme, and the simple manner in which it is carried out, seem to prove its adaptability to the cases of large establishments, as workhouses gaols and barracks, wherever sloping land exists, on which matter at present wasted, could be turned to profitable account. As a contribution to the solution of the sewage question, it may be mentioned here that the waste of a household numbering perhaps 150 persons during three months of the year, is thus delivered over fifteen acres, while the compost taken from the tank is applied to about one-third more. The produce of the grass is many-fold that of the land around it; and, eaten barer, it affords food enough for three or four times as large a stock.*

A considerable portion of the Osborne estate is, as already observed, and as is indicated in the Map (page 11), in woodland. This has been greatly improved of late years by

* An interesting account of a successful adoption of these plans is given by Mr. Menzies, the Deputy Surveyor of Windsor Park and Forest, in a pamphlet recently published by Messrs. Shaw & Sons, of Fetter Lane, entitled, 'A Report upon the Management of the Sewage and Irrigation at the Wellington College.' The tank, built upon the plan above described, here deals with the waste of an establishment of 300 persons. The use of the water which flows from it, and the points which seem essential to its successful application, are thus described:—

'1st. That the whole sewage matter should flow and act simply by gravity, unless some

very economical pumping power can be applied to the liquid alone.

'2nd. That upward filtration is the only form which will continue to work satisfactorily, and make irrigation safe afterwards.

'3rd. That the filtering beds should be composed of burnt bog earth, although clay or house ashes would also answer.

'4th. That the ground to be treated should be thoroughly drained previously, and deep trenched, if similar to that at the College: and that, if possible, light sandy soil should be operated upon in preference to clay. If only clay land is obtainable, and old grass land is

attention to fencing, by a careful drainage with deep and frequent open ditches, and by planting. The timber of the estate, to a great extent originally of oak, is, as generally at the sea side, very stunted and inferior. Few good trees exist in the woods, chiefly coppice, of which the plantations consist. Large numbers of coniferous trees have, however, been successfully planted during the past ten years. *Pinus Austriaca* and *in-signis* especially seem to prosper; and a note of the growth and qualities of some others of the numerous species planted as specimens and in quantity, has been kindly supplied by Mr. Toward, and will be found in an Appendix.

. A great deal has been done in the way of transplanting. Trees of ten or twelve years of age are easily moved by an apparatus capable of lifting and carrying a ton weight of earth around their roots. At present the only produce of the woods is faggots, hurdles, and wattle rods in faggots for fencing:—which are cut and prepared for sale at a cost of 3s. 6d. per hundred, 3s. 6d. per score, and 4s. or 5s. per hundred respectively. The average profit from the woodland, notwithstanding

selected, very close deep drains should be put in.

‘5th. That grass land and kitchen vegetables are the best crops to which to apply the liquid, and that probably dairy stock are the best animals for consuming the grass, although it is a most valuable assistant for draught horses, or young stock, or for a change for saddle horses; and would also be good for ewes or lambs early in the year, when succulent food is difficult to

be obtained. It is proposed to fold sheep over the play-ground, and feed them with this grass.

‘6th. That there should be an abundant supply of soft water, free from strong mineral ingredient, which can be made available without any great expense being incurred in rendering it so.’

Plans and sections accompany the pamphlet, and details of expenditure are added, so that it is a complete guide to the operations of any who may wish to follow the Osborne example.

continual expenditure on planting, ditching, fencing, &c., has exceeded 100*l.* a year.

The cottages of the estate have evidently occupied a great deal of the attention of the owner. Illustrations of them will be found in a chapter farther on, in which the efforts of the Prince Consort for the interests of the labouring class more generally are related. It must suffice here to state that there are at present on the estate forty-five cottages for labourers, thirty new ones having been erected during the present ownership; some of them in the place of others in a ruinous condition, which have been pulled down. They are now all provided with three bedrooms each, a living room, back kitchen, and offices; and a large garden is attached to each. They let for 1*s.* 6*d.* to 2*s.* a week, apiece.

It must not be forgotten in the list of improvements effected on the estate, that its parish church, of which a sketch is given on the following page, has been last year rebuilt.* It is now an extremely beautiful specimen of church architecture in the Norman-Gothic style; the pointed arch of later times being combined with the mouldings characteristic of the earlier period. The whole is an illustration at once of the fine taste and of the earnest religious feeling of the Prince Consort. The church was erected from the designs of

* The church was designed by the Prince Consort, and the plans were carried out at the joint expense of Her Majesty and himself. Not however exclusively at their cost, for private contributions provided the sum of 845*l.*, which was applied to the internal fittings.

the Prince. Great simplicity in the general outlines is united with great beauty, both of form and colour, in details; the guiding principle, apparently, being the impossibility of overcostliness of ornament, provided that it be instructive on essential points of religious truth. No incident or history of any



SKETCH OF WHIPPINGHAM CHURCH

merely human life is depicted on the walls or windows here the birth, the crucifixion, the resurrection and ascension of our Saviour are represented, and He is exhibited as 'the light of the world,' 'the true vine,' 'the good shepherd.'

The Prince Consort, who, on his last visit to the building, personally assisted in the unpacking and examination of the coloured windows which present these pictures, never saw the

church in anything like a completed state. Indeed, it was not finished at his death ; and it has been since proposed that a window in memory of himself should be added to the series already placed by him. It was, however, immediately remembered that the whole church is his memorial — a monument of his own designing which recalls at once the purity and usefulness of his character and life. The Queen intends, we understand, to place a memorial to the Prince in her own pew.

Before leaving the more immediate neighbourhood of the Palace on our walk through the Barton Homestead and Farm, let us retrace our steps somewhat, and, skirting the southern edge of the Park Valley, visit the Swiss Cottage and the Gardens of the Royal Children. These are interesting for the proof they give of the practical good sense that has guided the education which the Prince thought necessary for his family ; for here, essentially, is a school, at which homely domestic and most useful instruction is given and received. Every garden, consisting of several plots, contains flowers (roses, lilies, pinks, &c.), and, in separate beds, strawberries, gooseberries, currants, and raspberries among fruits, and asparagus, artichokes, potatoes, turnips, cabbages of various sorts, onions, carrots, parsnips, lettuces, and other culinary vegetables. The cultivation of all these plants has to be looked after ; and close by, in the Swiss Cottage, is a kitchen, where the vegetables which have been grown by every little gardener may be washed and cooked ; where cookery of other kinds is carried on ; where, indeed, all

the apparatus exists for juvenile entertainments, given by those who have thus themselves carried out the whole process, from the planting of the seed or set, up to the preparation of its produce as food. It is extremely interesting to see in the orderly arrangement of the tools, each one bearing its owner's name—in the well-tilled plots—even in the arrangements for practice and instruction in the kitchen, as well as in the admirable collections illustrative of various branches of natural history in the Museum upstairs—proofs of that regard for the systematic, the useful, and the practical which the Prince Consort was known to possess. And still more interesting is it to learn that not only are the immediate ends contemplated in these things fully attained, but that the family bond is strengthened, here as in humbler instances, by every homely, family enjoyment shared in common. The Crown Princess of Prussia still retains her little garden, and produce from it is sent each summer from Osborne to Berlin.

Let us now walk through the Barton Homestead, whose position on the estate may be seen upon the Map (page 11). The sketch represents it as seen from the south; the clock-tower of Osborne House, which lies to the north of it, being seen upon the left, in the distance. The plan is given in page 25, and at page 27, an isometrical projection, taken from the north-east, is represented.

The buildings are hidden from the House by their sunken site, and by plantations along the edge of it. The roadway to the Barton House, lying thus along the foot of an abrupt bank, is at the top of the surface more gradually sloping from it, on which is a series of east and west rows



SKETCH OF THE BARTON HOMESTEAD

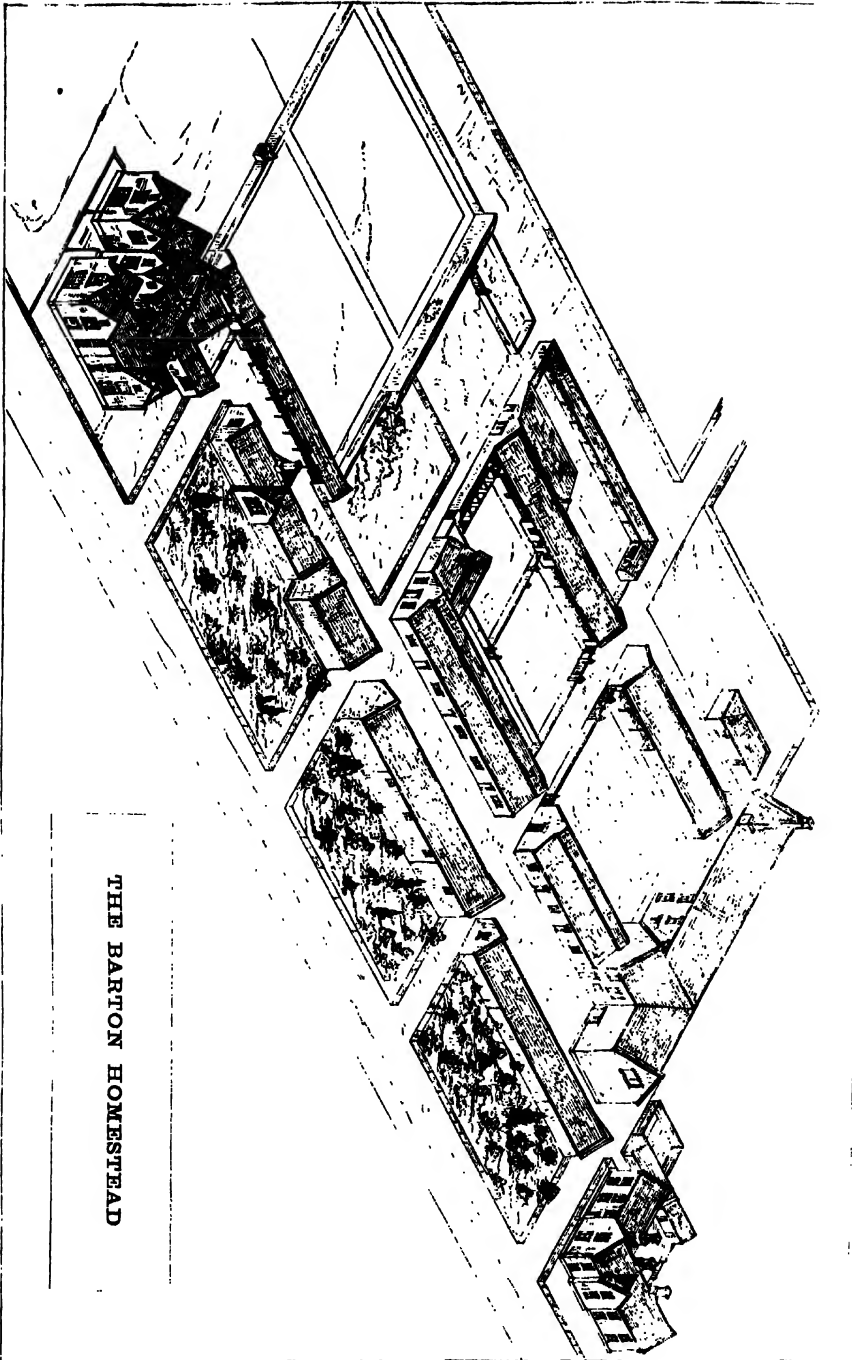
of buildings and of yards, connected by the higher cross line of barns and thrashing-house; and at their western end the rickyard stands. The outer row of buildings near the road is, like the Barton House, built of stone; the remainder of the homestead is of brick, and roofed with ordinary red pantiles. Coming to it from the farmhouse, you pass between a double row of shedding, set apart on one side as a cottage, coach-house, &c., and on the other as implement-shed, house-stable, &c. A little study of the Plan and of the index upon it will show how easy is the communication in these buildings between those



parts which are connected in use; and this, as saving labour in the management of stock and produce, for whose shelter they are designed, is the true key to the merit of farm buildings. The rick-yard and root-stores lie on the farther (western) side of the thrashing-barn and turnip-house, so that corn is easily brought to the thrashing-machine, and roots are easily brought to the turnip-cutter. These roots are cut by a stationary oscillating turnip-cutter, and filled into a truck upon a tramroad, by which all kinds of food are easily conveyed to their destination in the feeding stalls and boxes on either side of it.

The straw-barn, which is of course close to the thrashing-barn, is also close to the yards where straw is needed, to this central roadway down the feeding-house where it is also needed, and to the roadway between it and the stables. The labour of carriage here, also, is thus reduced to a minimum. It is also close by the chaff-house, passing thither through a chaff-cutter, by which it is reduced either to small chaff for mixture with food, or to coarser chaff for litter in the cattle-boxes.

The machinery is well arranged. From the fixed engine, erected by Messrs. Easton and Amos, shafting, fixed wherever necessary, conveys power and motion to Clayton and Shuttleworth's thrashing-machine with straw-elevator, Garrett's chaff-cutter, Burgess and Key's oscillating turnip-cutter, Biddell's cake-crusher, Ransome's corn-crusher, and Hughes' mill-stones on one side, and on the other to Parssons' saw-bench in the carpenter's shed close by. In the implement-sheds are col-



ISOMETRICAL PERSPECTIVE OF THE BARTON HOMESTEAD

THE BARTON HOMESTEAD

lected, when not in use, the best farm implements of the day; Burgess and Key's mower and reaper; Howard's ploughs and harrows; Crosskill's clod-crusher, a capital tool on the heavy plough land; Chandler's water-drill, which, on the other hand, is not adapted to the adhesive soils of the Barton Farm; Garrett's horse-hoe; Chambers' manure-distributor; and, among other things, an old and clumsy, but most efficient two-rowed manure and turnip seed drill, brought from Fifeshire, many years ago, by General Wemyss, and used every season still. Among the machines must not be forgotten Smith of Woolston's steam cultivator, windlass, and wire-rope, worked by an eight horse-power movable engine. It was introduced early in 1860 by the Prince, who thus ranks among the first of our steam cultivators. Very little was done with it that season, owing to the excessive rainfall, but it was made useful in the spring of 1861, so that preparation for turnip-sowing had never been more forward; and as a result in part of this, the turnip crop was last year exceedingly good and uniform. Last autumn about twenty days' work was accomplished with it at a cost of 15*l.* in wages, 7*l.* 10*s.* in fuel, and about 1*l.* in repairs. During this time about one hundred acres of deep grubbing were accomplished, at a cost therefore in immediate expense of about 4*s.* 8*d.* per acre.

During the spring of 1862, and up till June 1, the following work has been done:—115 acres have been cultivated from seven to nine inches deep, once over, the total cost being

26*l.* 7*s.* 2*d.*, or about 4*s.* 7*d.* per acre. This has been done in twenty-three days, costing therefore

	£	s.	d.
For labourers' wages, at 16 <i>s.</i> 6 <i>d.</i> a day	18	19	6
Coals	5	9	6
Oil	1	1	3
Repairs (Blacksmith)		16	11
	<u>£26</u>	<u>7</u>	<u>2</u>

The work done has been accomplished on an average at the rate of five acres a day, but frequently seven acres a day have been cultivated where the land worked well, notwithstanding that in the strong stiff clays there were delays at the turnings, in consequence of the ground being so wet and soft that the anchors were drawn in, so that it was often a difficult and tedious matter to get them out.

The accommodation for stock in the buildings is exceedingly good. A thirteen-stall stable, with two loose-boxes at one end and harness-room at the other, provides accommodation for the horses of the farm. The stalls, six and a-half feet wide, are provided with a rack on one side on the level of the manger, for chaff, hay, or green food, a manger for corn, and a small tank for water in enamelled iron. The whole of the stabling and cattle-sheds are well supplied with water by natural gravitation from a spring and pond outside, and all are drained to a tank in one of the yards, to which the cattle stalls and courts also have their liquid waste directed, and whence it is taken at intervals by water-carts to the pasture land.

The central line of buildings contains a double row of accommodation for cows and fattening cattle—boxes or stalls or calf-pens—on either side of a gangway furnished, as already said, with a tramway. Parallel with this, on the other side of intervening yards, is other shedding for the yard-fed cattle not yet put up to fatten; and on the southern and eastern sides of the eastern yard, facing, respectively, south and west, are the well-arranged pigsties. In the eastern yard, too, are bulls' houses near the cow-byre, and boiling-house close by the piggeries; and below the eastern yard, on the southern side of it, are sheep-yard and shedding used as a lambing-house. There is thus ample accommodation for the machinery and the horse-power of the farm, for the cows and fattening and store cattle, and for the pigs and sheep. As a last illustration of the fitness of the arrangements for the economy of labour, we may point out the granary, built on arched and fire-proof floor over the cart-sheds, thus enabling the easy loading of the carts for market.

The live stock of the farm includes thirteen working horses, chiefly Clydesdales, three or four mares, and a pure Clydesdale stallion, brother to the prize filly shown by the Prince Consort at the Leeds Show, and son of the prize stallion shown at the Chelmsford Meeting of the Royal Agricultural Society. Three or four mares are bred from every year, so that of all ages there are generally twenty-four to thirty horses. Twelve to sixteen Alderney cows, and a bull of the same

breed, are kept. The dairy is within the farm-house; a good example of simplicity and cleanliness of arrangement and management. Eight breeding-sows of the black Sussex breed are kept, and their produce are for the most part fattened as large porkers, being killed when from four to eight score lbs. apiece. The stock at any one time thus generally comprises one hundred pigs, or thereabouts, of various ages. Besides the cows, and their produce reared for breeding purposes, some thirty or forty Galloways are purchased every year at the Barnet Fair, fed in the yards on straw and turnips during the first winter, turned out to the pastures during summer, taken in to the boxes and feeding-stalls during the following winter, and fattened off as fast as possible on turnips, swedes, mangolds, hay, cake, and meal. In feeding, excepting in the case of the pigs, no cooking of food is practised. Hay and straw and roots are cut into chaff and slices, and corn and cake are crushed and ground; but the food is given in an uncooked state. A flock of forty to one hundred Dorset ewes, in lamb by a blackfaced ram, is purchased every autumn. Lambing commences before Christmas. Both ewes and lambs, fed first on turnips brought to them in the shed and pastures, are at length folded in the turnip-field; the ewes receiving there about half a pound of oil-cake apiece and a few peas daily, the lambs having liberty beyond the fold, and receiving, in addition to the turnips, as many peas as they choose to eat; both thus fattening together. The Dorset lambs, thus fed, have been

this spring worth 38s. to 40s. apiece in the months of April and May.

A flock of three hundred South-down ewes is also kept, and their produce kept on, and fattened and sold, at twenty or twenty-four months old. The stock of all kinds which has a place in the Michaelmas inventory, when it is as low as at any time during the year, thus varies from 800 to 1000 head.

The following is the list for the last two years, and for 1856, since which considerable advances have been made:—

	1856	1860	1861
Horses	14	20	20
Colts and Foals	6	11	11
Milch Cows	16	10	14
Calves	8	54	57
Other Cattle	40		
Rams	1	4	4
Ewes	206	422	329
Lambs	147	246	300
Other Sheep	300	111	—
Swine	54	51	91
	<u>802</u>	<u>929</u>	<u>826</u>

Let us now take a walk across the farm. It includes 820 acres, of which 412 are permanent pasture, and thirteen are waste and wood. The cropping of the remainder last year was as follows:—

Wheat, 86 acres; barley, 44; oats, 64; beans and peas, 26; vetches and rape, 24; potatoes, 2; turnips, 88; carrots

and cabbages, 3; mangold-wurzel, 8; clover, 50—the corn crops thus amounting to 220 acres, and the green crops to 175. The cropping this year is as follows:—

Acres		Acres	
95	Wheat	77	Turnips
61	Barley	3	Cabbages and potatoes
46	Oats	24	Vetches
54	Clover and grass	10	Pease
3	Trifolium	6	Fallow
16	Mangold-wurzel		

On the Map at page 11, the arable fields of the Barton Farm are numbered—the rest of that portion of the estate, with the exception of the two outlying fields in the extreme north of it which are also plough-land, being pasture. Notwithstanding discrepancies of acreage, the rotation adopted is essentially a four-course series. When, however, one corn crop follows another, as oats or barley after wheat, a dressing of guano is given. Since the purchase of the estate, an immense improvement has been effected in the land, not only by tillage and drainage, but of course also by the purchase of artificial and other manures, and of cattle food. Less is done in this way now than in former years, when it was more needed. Thus, in 1856, they purchased 717*l.* worth of manure; in 1861, they applied only 214*l.* worth. In 1856, they used 480*l.* worth of corn and feeding stuffs; in 1861, they bought only 280*l.* worth. The produce per acre of the crops has thus been raised to from four to five quarters per acre of

wheat, four and a half to six quarters of barley, and from five to seven or eight quarters of oats. A few acres of Belgian carrots, for dairy cows, and of cabbages which yield most useful autumn produce, are generally grown. And five or six acres of corn stubble are sown each autumn with the *Trifolium incarnatum*, yielding most useful early spring food for the stables.

White mustard is also occasionally grown as a stolen or catch-crop. The Swedish turnips, of which there was last year an unusual extent, are grown either in rows sown by the Suffolk drill upon the flat, or by the sowing machine already referred to on the raised drill system adopted in Scotland; and on this plan of cultivation, as the crop then followed a failing mangold plant, there were last year several fields. The crop was remarkably full and even, not a blank being visible in the planting, and a good average size prevailing through the fields. In general, superphosphate and ashes are depended on for a crop of swedes. The dung of the boxes and yards is applied upon the clover for the wheat crop, and for mangolds, cabbages, and carrots. A large quantity of manure is thus provided, and, with the artificial aids already named, the farm is growing in fertility. The manure from the Royal Mews is also purchased for the farm, and this is a clear addition to the land, as all the hay and straw of the farm is consumed in the courts and buildings of the farm itself.

On walking over the fields you are struck with the excellence of the roads and fences. These last are almost entirely new, i.e. made since the purchase of the estate ; they were planted a single row of thorns in lines prepared carefully for them by deep digging and manuring, and they have since been kept perfectly clean and well trimmed—one man having the sole duty all round the year of looking after them. They are now a good sheep fence, occupying not more than two feet in width, and being about three feet or three and a half feet high. The land is cultivated close up to them, and the fields are clean. A mixture of holly with thorn is added, with great success, wherever the fence runs under trees, in which case thorn alone will not prosper. The wheat fields just coming into growth (June 1862) promise extremely well. The clovers are yielding a heavy swathe to the scythe.

The cultivation of the land is expensive as regards manual labour ; from 1,000*l.* to 1,100*l.* are paid annually in this way, besides 200*l.* or thereabouts put down as the cost of corn and hay harvest. Piece-work payment is adopted wherever possible, as in the case of turnip and corn hoeing, and that of tying and stooking corn after the reaping-machine. From 4*s.* to 4*s.* 6*d.* are paid per acre for this harvest work ; and from 10*s.* to 11*s.* per acre are paid for two hoeings of the turnip crop. The mowing-machine and the reaper, and Garrett's horse-hoe, have somewhat diminished the expense of labour, and at the same time increased the efficiency of the work done.

In no particular is Barton Farm more interesting than as an illustration of the relations which ought to subsist between a master and his servants. Mr. Toward has always received personal instructions from H. R. H. the Prince Consort, and now from Her Majesty, who desires that everything shall be retained and carried out as the Prince had willed it: and these instructions are carried out by foremen, each responsible in his own department. This arrangement, by which the full use is made of all the ability of the men, and by which the position of the foremen over them is efficiently maintained, in no degree interferes with the personal interest directly taken by the Queen in the fortunes and affairs of the labourers and cottagers on the Royal property. Many an instance is related of the kindly sympathy both actively exercised and most touchingly claimed by Her Majesty in intercourse with her humbler neighbours. No wonder that the sore affliction which has befallen her is felt as having also befallen the whole community, and especially those, from the highest to the lowest, in more immediate contact with the Royal Family.

A large number of labourers are employed on the estate and farm, and provision is made for their accommodation by recently erected blocks of large and roomy cottages, each containing two, sometimes three, apartments below, and three bedrooms above, and all supplied with good and useful gardens. To these reference has been already made, and a fuller description of them will be given hereafter. About seven carters

and ten regular farm labourers, besides twelve or fourteen others on the average, are regularly employed, and the field work of women is also an assistance during spring and summer.

The wages of the men are 14s. weekly, and they pay generally 2s. weekly for their cottages. They have in almost every case been on the estate from the commencement of the present ownership. They are all English, and for the most part natives of the locality.

In hardly anything was the practical supervision of the Prince Consort more marked than in the monthly personal examination by him of the farm accounts. Details and abstracts of all the expenditure were every month submitted to him; the sums expended in labour, the sales and purchases, were thus recorded and reported, and the totals carried out from month to month. And the annual summary, including valuations at the beginning and close of the year, furnished a detailed and precisely constructed annual balance-sheet. And it is to the honour of the management that a large annual sum, to be credited as rent, has always been derived from the farm management of the estate. The valuations on which the nature of the balance so materially depends are most strictly and carefully conducted. We have had the opportunity of examining the annual accounts, and some of the successive valuations. They have been increasing in amount from year to year, as might have been expected on a farm which has been rising so rapidly into fertility by dint of drainage, cultivation,

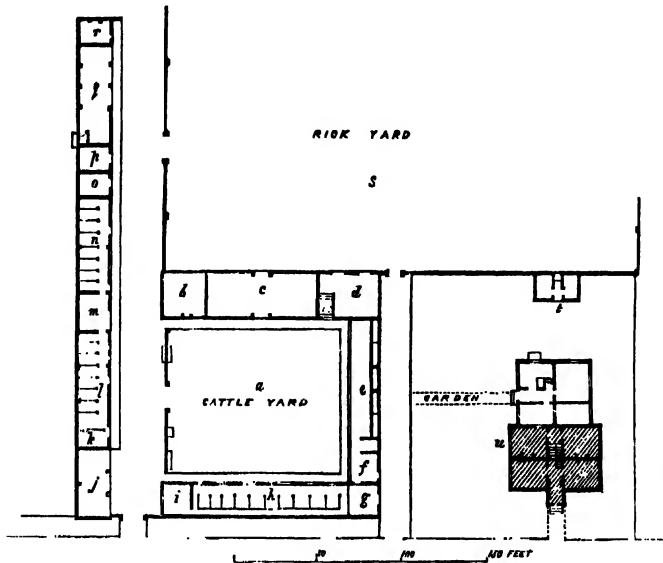
and continual purchases of cattle food and manure. At a recent autumnal valuation, there were 1,000*l.* worth of farm-horses, 1,200*l.* of cattle, 1,400*l.* of sheep, 200*l.* of pigs; nearly 3,000*l.* worth of corn and hay, 1,000*l.* of implements, and 500*l.* of root crops; and a farm capital of more than 8,000*l.*, invested on the 800 acres.

The expenditure and returns connected with the estate are annually recorded in a simple form of accounts under the different heads of pleasure grounds and gardens, woods, drainage, roads and drives, fences, woods and earth works; and a similar system is adopted for the farms, the divisions here being for labour, manure, implements, live stock, corn and feeding stuffs, salaries, rents, and rates. The plan of these accounts, which is adopted on all the farms, is due to Mr. Harrison, Secretary to the Privy Purse, who drew it up in consultation with Mr. Toward and the late Mr. Wilson, the bailiff of the Windsor Farms.*

The southern end of the estate is occupied by the Alverstone and Heathfield Farms. Of these only the former was in the Prince's occupation. It is about 350 acres in extent, fifty being in permanent grass. The homestead on it, whose plan is given on next page, was erected in 1855. It includes, as the following references to the index letters on it show, a line of buildings occupied as cart-sheds, stabling, implement-

* A copy of the monthly returns on which the annual statement is based will be given hereafter.

store, &c., and on the opposite side an intervening road, a rick-yard and open court, the latter surrounded on its other three sides with feeding-stalls, cow-byre, pigs' house, open shed, and barn. The house, used as a farm-house for Mr. Pisto, the



PLAN OF THE ALVERSTONE FARM BUILDINGS

REFERENCES TO INDEX LETTERS

<i>a</i> Cattle-yard	<i>k</i> Loose box
<i>b</i> Straw-barn	<i>l</i> Stable
<i>c</i> Thrashing-barn	<i>m</i> Corn and Hay Room
<i>d</i> Implement-store, with granary above it	<i>n</i> Stable
<i>e</i> Cow-shed	<i>o</i> Loose box
<i>f</i> Hay-house	<i>p</i> Tool-house
<i>g</i> Calves' house	<i>q</i> Cart and manure shed
<i>h</i> Byre and Fatting-house	<i>r</i> Mess-room
<i>i</i> Root-store	<i>s</i> Rick-yard
<i>j</i> Cart-shed	<i>t</i> Offices
	<i>u</i> Farm-house

resident farm manager, stands a little apart. The Alverstone Farm has been a shorter time in hand than the rest of the estate. The drainage is still being carried on; roads have been lately made through it; much of the extremely rough grass-land on

it is being broken up; some of the arable-land, extremely stiff and intractable, is being laid down again in pasture after a course of improving tillage. The cultivation is essentially on the four-course system, viz.: 1. wheat, 2. clover and grass, 3. oats, 4. vetches, turnips, rape, and mangold-wurzel.

Large quantities of town dung, consisting of the contents of out-houses, piggeries, and cow-byres, are brought from Newport, where it is purchased for 4s. 6d. per ton. The value of this dressing was very obvious on the young wheat as it appeared this spring. The plant was much inferior where the ordinary farm-yard dung took the place of what had been brought from Newport. Great variety of soil exists upon the farm. Some of the land is so extremely stiff that ploughing needs a four-horse team, while elsewhere on the lighter land there is an open turnip soil, yielding sometimes heavy crops of oats. Halfway up the hill, between the gravel and the clay, lie fields whose subsoil is made up apparently of alternate layers, and here the effect of land drainage, witnessed especially on certain grass fields at the northern end of the farm, has been very obvious and beneficial. The rough portion which is being broken up on the clay land below is drained and ploughed and roughly tilled, the tussocks of rough grass are burned, and the whole is left till another year. It is then again ploughed and cultivated, and left for a second, and even sometimes a third year, before the process of decay and comminution is sufficiently completed to give

any prospect of profitable arable culture. The loss by mere time is but of the rent, and as this, on a fair valuation of a good deal of the original land, does not exceed 5s. per acre, it is less expensive to do the work thus slowly, availing oneself of the natural process, than, by laborious and repeated burning, ploughing, and harrowing, to create less perfectly an artificial tilth. Besides purchased bulky town manure from Newport, which is found especially adapted to the clay soils of the Alverstone Farm, large quantities of chalk are used; twenty-five tons, or thereabouts, per acre, are bought for $7\frac{1}{2}l.$ per ton at a distance of three miles, and laid during autumn and winter on the land, and ploughed under with great ultimate improvement of the soil, which is thus rendered capable of more marked improvement by the use of other fertilizers.

In the midst of the Alverstone Farm lies the tilery of the estate, where capital goods are turned out of all colours—white, red, and black. Moulds are used for every sort of brick required in the drainage either of fields or roads, or stalls, or yards, and for every variety of brickwork connected with walls, windows, chimneys, roofs, caves, and flooring.

It is not fair to conclude this report of well-organised management, with its results on the Osborne estate, without remarking on the great contrast which the property exhibits, when it is compared now with the date of its purchase. This is attributable, of course, originally, to the good judgement

displayed in the plans adopted by the Prince Consort, and since then to the liberal and constant countenance and support given to Mr. Andrew Toward by both Her Majesty and His Royal Highness in carrying them to their present successful issue. Fields of all shapes and sizes, surrounded by ragged and broken fences, bad roads, poor cottages and buildings, have been replaced by trim and shapely enclosures, good cultivation, the best possible accommodation for both inhabitants and farm stock, and every other evidence of intelligence and liberality in the owner, and of welfare and contentment among the labourers.

We travel now to the northern end of the island, and visit the other property acquired for the Royal Family during the lifetime of the Prince.



BALMORAL CASTLE

BALMORAL CASTLE, of which the southern front is represented above, stands in the parish of Crathie, on the right bank of the Dee, on a natural platform at the foot of a hill called Craig-Gowan, about fifty-two miles WSW. from Aberdeen. The new mansion was commenced in 1853, after various alterations and additions had been made to the old house, which stood to the south of the present building.

The general style is the Scottish Baronial, modified, of course, with a view to meet modern wants and convenience.

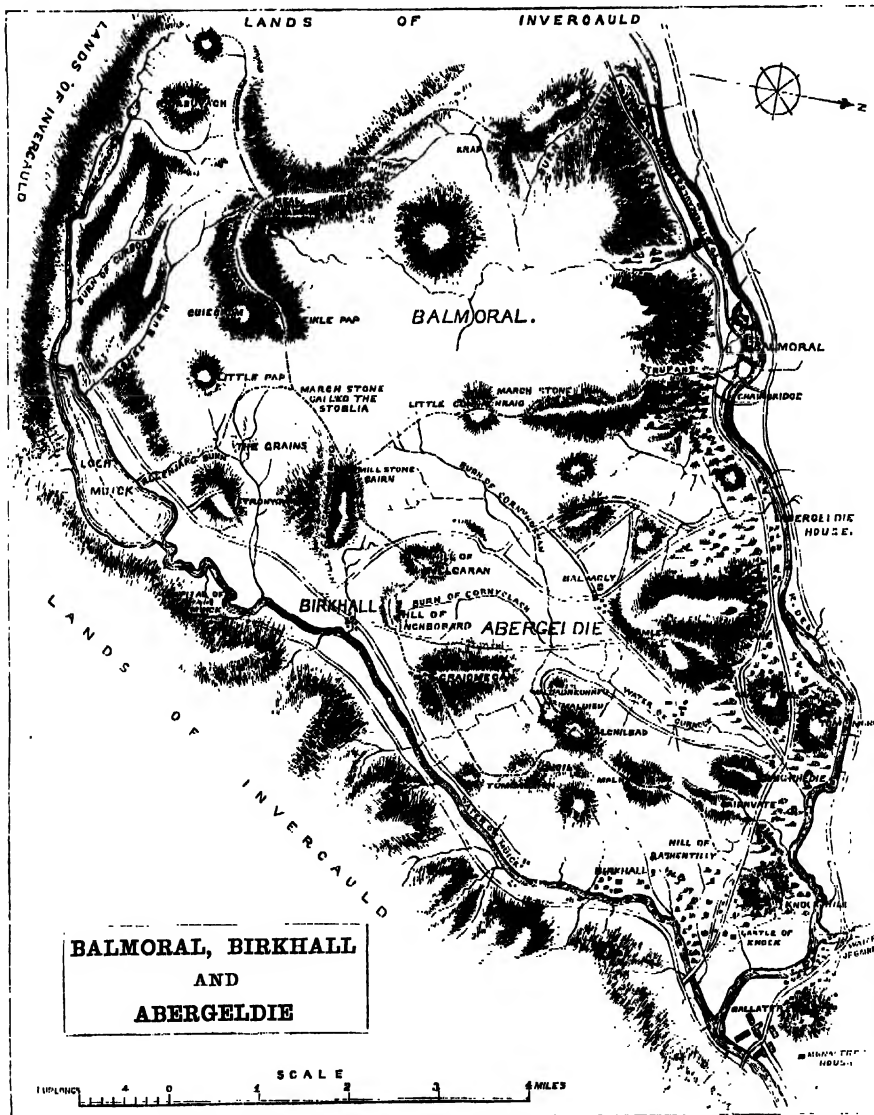
and exhibiting, therefore, more of the character of a modern mansion than of an ancient stronghold. It was designed by Mr. William Smith, architect, Aberdeen, and executed under his superintendence, according to orders received from time to time from the Prince. The plans and elevations were submitted to the Prince Consort in June 1852; but many important additions and alterations were introduced by His Royal Highness during the progress of the building, which he constantly watched with great interest. The Prince had expressed to the architect his wish that the building should be not like a palace, but like a country gentleman's house; and, accordingly, there is less pretension about it than many might expect.

The ornamental details are judiciously introduced, and have been admirably executed in the beautiful granite of which the Castle is built. Among them are a number of pannellings, cut here and there on the external wall, illustrating the various sports of the country: the subjects chosen by the Prince—the designs for them by the late Mr. John Thomas, sculptor, being deeply cut in bas-relief. The Castle includes two principal blocks of building, joined by connecting wings; and at the angle rises a handsome tower, the principal feature of the Castle, thirty-five feet square, with a circular staircase turret at one corner, about one hundred feet in height.

At the west angle of the south front are the carriage porch and the entrance-hall leading to the corridor, which

runs behind the principal rooms. These are situated on the west and north sides, and are fifteen feet high.

The kitchen offices, forming rather more than three sides of a square, are built on a lower level than the Castle, to suit the ground; and the ball-room, a handsome apartment,



MAP OF THE BALMORAL ESTATE.

sixty-eight feet by twenty-five, is situated along its west side, so as to screen the offices from the dining-room windows and from the terrace and grounds on that side.

The Map on the preceding page gives the outlines of the estate on which Balmoral Castle has been built. The district here represented is a capital specimen of the mountain scenery of the Grampian range. There are indeed few localities which display so well the characteristic features of the Highland landscape as the upper valley of the Dee. Situated in the midst of the Grampians, far from the usual routes of the traveller, it enjoyed until lately almost entire seclusion, interrupted only by the annual visits of the sportsman and the naturalist.

From the village of Ballater (where the upper district may be said to commence) to Castleton-of-Braemar, a distance of eighteen miles, and embracing the parishes of Glenmuick, Crathie, and Braemar, the valley is narrow, in many cases not exceeding half a mile in breadth, and sometimes barely affording room for the road along the banks of the Dee, which traverses its whole length in a deep and rapid stream.

The mountains bounding the valley rise in abrupt and successive ridges, culminating on the south side in the steep and rugged Lochmagar, and on the north in the still loftier peaks of Ben-a-bourd, Ben-A'an, and Ben Macdhui.

Not only the banks of the river, but many of the lower hill sides, are covered with the weeping birch, the mountain

ash, the trembling poplar, and the dark pine or Scotch fir, growing in all the wild luxuriance of nature.

The arable land is confined to a narrow strip of light sandy soil on the immediate banks of the Dee and its tributaries, while the upper parts of the mountains, and the ridges and narrow glens between them, are covered with a moory or mossy soil, forming, during the summer months, the pasture-grounds of large herds of red deer.

Owing to its position in a deep and narrow valley, under the shadow of the highest mountains in the kingdom, the winters are severe, the thermometer not unfrequently falling as low as twelve degrees below zero, while the summers are generally warmer than in the low country, where the heat is tempered by neighbourhood to the sea.

Balmoral is situated in the centre of this district, on the northern slope of Lochnagar, and in the parish of Crathie. It is bounded on the north by the Dee, on the south by Birkhall, on the east by Abergeldie, and on the west by the forest of Ballochbuie.

It formed part of the ancient lordship of Braemar and Strathdee, which, in 1564, was conferred by Queen Mary on the Earl of Moray in a charter which is still extant, and specifies the rent-charge payable to the Earl. Early in the following century, Balmoral passed into the hands of the Farquharsons

of Inverey, a branch of the Farquharsons of Invercauld. In this family it remained till 1798, when it was purchased by James Earl of Fife for 7,020*l*.

In 1836, the Right Honourable Sir Robert Gordon leased the property for a period of thirty-eight years, with the view of converting it into a deer-forest.

Considerable sums were expended by him on judicious improvements, including the erection of a handsome villa on the bank of the river, and near the site of the present Castle. At his death, in 1847, the remainder of the lease was purchased by H.R.H. the Prince Consort, from the late Earl of Aberdeen.

In 1848, the Royal Family paid their first visit to Balmoral, and in 1852 the fee-simple of the estate was acquired from the Fife trustees. Its area is about 10,000 imperial acres, of which, at the date of the purchase, only 200 were arable, and 800 under natural wood, chiefly birch or Scotch fir, while the remaining 9,000 consisted of wide tracts of moss and moorland, interspersed with high, rocky ridges, bounded on the south by the lofty precipices of Lochmagar.

While Balmoral, we believe, fully realised the expectations of His Royal Highness, who admired the picturesque beauty of the scenery, and enjoyed its dry and bracing atmosphere, he soon discovered that it was too limited in extent to afford full scope for the sport of deer-stalking, which was one of the

main objects of a Highland residence. The adjoining estate of Birkhall was therefore purchased in 1849 for H. R. H. the Prince of Wales. This added 6,000 imperial acres, of which 400 are arable, and 400 under wood, while the remaining 5,200 acres consist of moorlands similar in character to those on Balmoral. The property was now bounded on the south by the Muick. In the same year the intermediate estate of Abergeldie was obtained on a lease of forty years, containing 14,000 imperial acres, of which 500 are arable, and 1,200 under wood, while upwards of 12,000 consist of moss and moorland.

The three estates, thus united, form a triangle, with an area of upwards of 30,000 acres, bounded on the north by the river Dee, on the south by the water of Muick and the Lochs Muick and Dhu-loch, and on the west by Lochnagar, and the succession of rocky ridges extending down to the Dee. The whole is known as the Balmoral Deer-Forest.

In extent, as compared with the Athole Black Mount and Mar Forests, it is far inferior; yet, from the quiet of its extensive woods, and the excellence of its pasture, it has become a favourite haunt of the stag, and numerous herds are to be found constantly within its boundary, affording sport, in proportion to its extent, equal to any of the larger forests.

No sooner had the Prince Consort obtained possession of these estates, than measures were taken to increase the comfort and elevate the condition of the tenants.

The population of the district are thinly scattered, and in several cases they are so isolated and distant from the parish school, that it was in many cases useless to the children. To supply this defect, commodious school-buildings have been erected, teachers have been appointed with liberal salaries, and the means of a religious and practical education have been brought within the reach of every family. A library, too, was established at Balmoral, the gift of the Prince, consisting of upwards of 500 volumes, selected by himself. All the cottagers on the estate have access to it, and it is very generally and gratefully used.

The agriculture of a mountain district is of course of a very simple character. The chief lessons, indeed, to be learned here, are those regarding the relation of landlord and tenant. The increase of the game (chiefly red deer) within the district soon led to considerable destruction of crops: substantial fences have accordingly been erected to prevent this for the future. New cottages have been built where needed, on simpler plans than have been considered necessary in the Isle of Wight. They are described and illustrated farther on. Homesteads have been built where the extent of the holding has rendered them desirable. We give a plan and isometrical projection of one of the new homesteads lately erected.

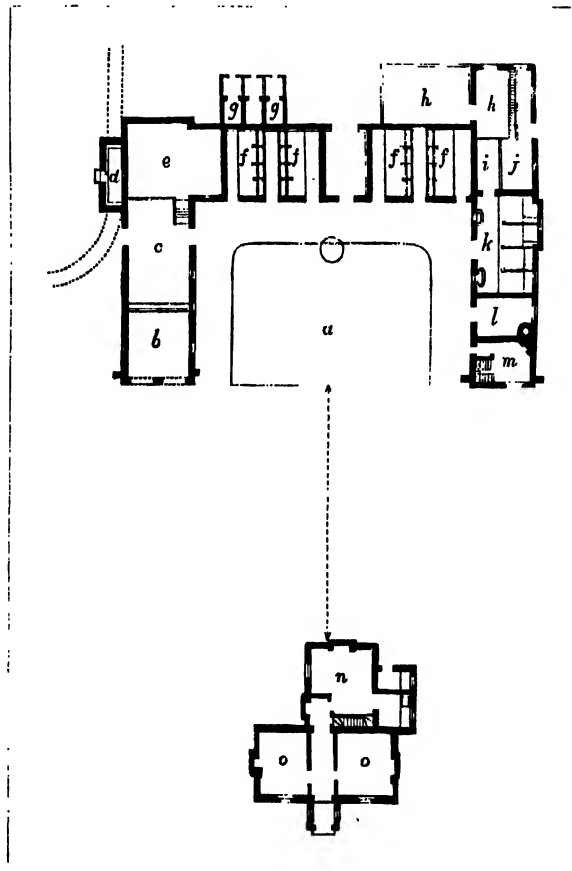
The Invergelder Farm, part of the Balmoral Estate, contains from sixty to seventy acres arable, divided into six fields lying parallel to each other along the bank of the river, with about ten

acres of rough woodland pasture. The soil is light and sandy. The Dee at some early period had swept over it, leaving enormous boulders of granite imbedded in the subsoil. At the time the property was purchased, and for several years after, the farm was held by a tenant who had allowed land, houses, and fences to fall into the most wretched disorder. After his removal, and since the Prince came into possession, extensive improvements have been made; handsome and commodious farm offices have been erected; fences renewed; every field, subjected to a green

LIST OF REFERENCES

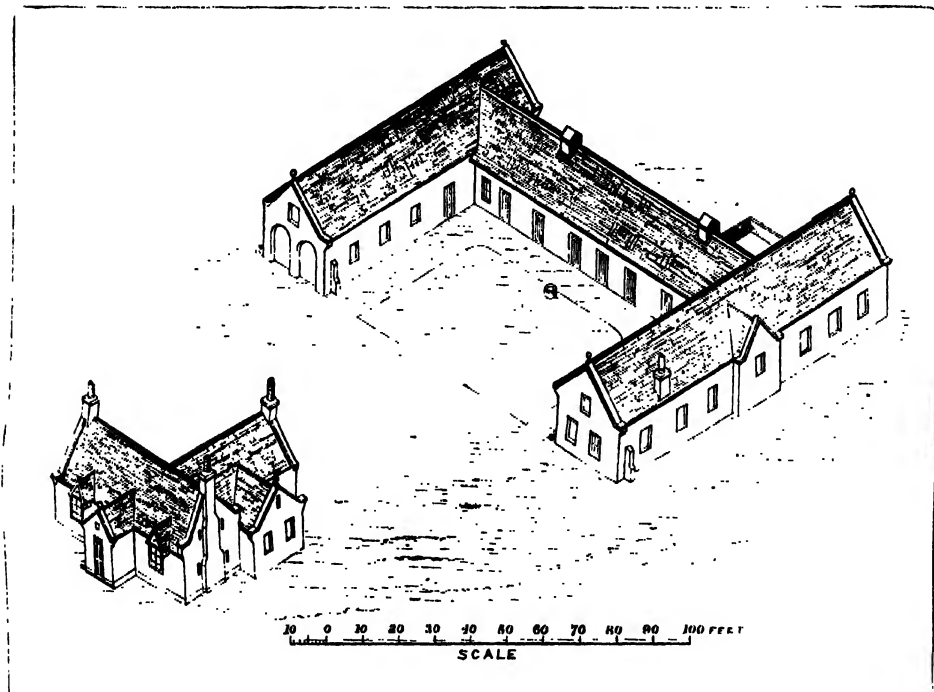
- a* Open yard
- b* Cart-shed
- c* Straw-barn
- d* Water-wheel
- e* Thrashing-barns
- ff* Cow-hyres
- gg* Pigsties
- h* Poultry-house and yard
- i* Harness-room
- j* Slaughter-house
- k* Stable
- Boiling-house
- m* Pantry
- n* Kitchen
- o o* Living-room

For scale see following
page



PLAN OF INVERGELDER HOMESTEAD

crop, fallow-cleaned, limed, and laid down in permanent grass. In summer the grass is stocked with four-year old Highland sheep,



ISOMETRICAL PROJECTION OF INVERGELDER HOMESTEAD

which supply the household with mutton during the visit of the Court in autumn; and in the winter Her Majesty's hill ponies have the run of the fields. It is proposed, by and by, to establish a small dairy upon the farm, with the view of supplying butter and milk for the royal table.

The Private Grounds which surround the Castle extend along the valley of the Dee for nearly a mile, and contain upwards of 120 acres. They slope from the base of the beautifully wooded hill of Craigowan on the south, by a series of natural terraces, to the river on the north, and vary in breadth from

100 to 400 yards. These terraces are thickly studded with the weeping birch, mountain ash, trembling poplar, and other indigenous trees. Betwixt the terraces vistas have been opened, affording distant views of the river, the neighbouring mountains, and other picturesque objects. Artificial mounds have been raised at various points, and planted with hardy shrubs and ornamental trees. Fountains, flower gardens, ponds, have not been forgotten. The cost of these works has been very great. All have been executed from plans by His Royal Highness, and will long remain a monument of his good taste.

From causes unnecessary to specify, the estates of which H. R. H. the Prince came into possession, had for many years been greatly neglected. The dwellings of the tenants, the farm offices, and fences, had fallen into decay; the cottages, or rather hovels, of the labourer and poor were wretched. No regular system of cropping was followed. Modern improvements in agriculture were not known, or at least they were disregarded. If the rent was regularly paid, very wide discretionary powers were allowed the tenant, as to the rotation of cropping he followed. The consequence was that weeds luxuriated, the thistle and dock struggling for a supremacy over the scanty crops of oats and bere: and, as might have been expected, the return was unprofitable. The whole of the arable land upon the three estates of Balmoral, Abergeldie, and Birkhall did not exceed 1,100 acres. This was divided into small farms or crofts—few exceeding twenty-five acres, the majority not being of half that

extent, while the number of tenants was over sixty. A croft of this size, two or three half-starved cows, a Highland pony, or it might be two, a few score of sheep, all turned out to shift for themselves on the hills, constituted the wealth of most of the tenants.

To apply a remedy to evils so obvious may appear a very simple process, but only those acquainted with the character and disposition of the people, and with the management of Highland property, can appreciate the difficulty of it. To get a Highlander to change a custom handed down to him from his forefathers, or to adopt an improvement on it, requires great patience. His feelings, and even prejudices, too, however mistaken, are often of a nature we cannot but respect. The love of country is a sentiment amounting to a passion in the heart of a Highlander. Other lands may be fairer, but the mountains and streams of his native strath are ever associated with his earliest and dearest recollections. To be driven from them is looked upon as a calamity, an injury never to be forgiven; and the landlord is branded as an oppressor who ventures to adopt such a practice. Mr. M'Kay, in his excellent remarks upon the management of Highland property, makes the following observations upon this subject: 'Throughout the Highlands, the relation between landlord and tenant has hitherto been different in many respects from what it is in other parts of the kingdom. Here the relation comprehends more than is included in being simply parties to a

business transaction, in which nothing further is looked for on either side beyond the strict fulfilment of a stipulated contract. As in ancient times the Highland chieftain was looked up to as the leader, protector, and father of his faithful retainers, so to this day, and in these peaceful times, do the occupiers of land in the Highlands respect and honour their landlords. The tenantry here have descended in direct lineal succession in the same possession even to as great an extent as the proprietary, and the principles held by their fathers, their attachment and adherence to their landlords, have been faithfully handed down and imbibed by their posterity. And who would not desire to foster and preserve this happy relic of feudal times, and save it from the rude grasp of the prevailing mammon-worshipping time-serving spirit of the age? How much more honourable and gratifying is it for a proprietor thus to live in the affections of his tenantry, to be loved and honoured while he lives, and to be truly mourned over when he dies, than, living or dying, to be cared for by none of them.'

Sentiments of a similar kind were entertained by the Prince Consort. No views of self-interest entered into his calculations. He loved the people, he admired their character, and he respected their prejudices as the antique vestiges of other days. His Royal Highness believed, that if they were ignorant, it was because the means of education were deficient; if they were indolent, it was because they had little field for encouragement to exert themselves; if sometimes slovenly

in their habits, it was because from poverty they were compelled to live in comfortless mud hovels. To increase the comforts of his tenants, to elevate their moral and social condition, were objects steadily kept in view, from the time the Prince became a proprietor of Highland property; and they were pursued with unabated zeal till the end of his life.

Anxious as His Royal Highness was to remedy the state of matters we have indicated, he was well aware the cure must be the work of time. It has been already stated, that school-houses were erected, and teachers appointed for the education of the young; and that to give a taste for reading, and increase still more the means of information, an excellent library, the joint gift of Her Majesty the Queen and the Prince, was established at Balmoral, and thrown open, not only to tenants and servants, but to all in the neighbourhood.

To describe the numerous improvements effected by the liberality of His Royal Highness upon the different estates, would prove tedious by repetition. It will be sufficient to state, generally, that comfortable cottages have replaced the former miserable dwellings; that farm offices, according to the size of the farms, have been erected; that money has been advanced for the draining, trenching, and improvement of waste land; that new roads have been opened up, and old ones repaired; and that fences have been renewed, and upwards of 1,000 acres of unreclaimable land planted.

But it was not to agricultural improvements alone that His Royal Highness's attention was directed; he saw the advantage of encouraging tradesmen and labourers of good character to settle upon his estates. Houses and gardens, with a croft where it could be conveniently added, for the keep of a cow, were provided at a very moderate rent, for the blacksmith, the carpenter, shoemaker, tailor, and general merchant. Similar encouragement was given to the steady labourer: and the extensive works thus undertaken were carried on over a series of years, so as to give constant employment. To the cottages thus erected Her Majesty and the Prince have been frequent visitors, cheering the hearts of the humble inmates by their kind enquiries and tokens of remembrance.

We have to add here the expression of our best thanks to Dr. Andrew Robertson of Indego, by whom the above account of the Balmoral Estates has been written. Dr. Robertson has acted as Commissioner over the property since its purchase for the Royal Family — and the practical execution of the many benevolent plans and improvements which have been here described has been throughout entrusted to him, under the immediate direction of His Royal Highness the Prince Consort.

CHAPTER II.

THE PRINCE CONSORT'S FARMS.

THE Prince Consort's farms in the neighbourhood of Windsor Park include (1) the Home or Dairy, and the Shaw Farms, (2) the Flemish, and (3) the Norfolk Farms, and (4) the Bagshot and Rapley Farms.

Of these the Prince Consort's Home Farm is wholly pasture, two others are only partly arable, and the last is to a great extent woodland, heath, and waste, being retained chiefly as a game preserve. They extend, in the whole, over about 2,400 acres, 700 acres being arable, and the remainder grass and woodland. Their position, relatively to each other and to the Great Park amid which they lie, is shown on the map on page 62, which is drawn on a scale of rather less than one inch to the mile.

Though under one tenancy as well as under one ownership, they represent a great variety of agricultural management, and are characteristically separate and distinct. His Royal Highness stood, we believe, alone in British agriculture, as in himself the exemplar and exponent of a greater diversity of farm practice and experience than any other single agriculturist; so that there

can be hardly any farmer in the country to whom one or other of the many facts illustrated on these farms is not personally and professionally interesting.

A great variety of farm buildings exists upon them. There are the gorgeous dairy and magnificent cattle range of the Home farm, fit for inspection by Royal visitors; and the well-planned combination of stabling, cattle-boxes, stalls and yards, poultry house and piggeries, with the covered sheep-shed over open floor and manure-tank underneath it as a special feature, at the Shaw Farm. The compact and compendious arrangement under a common roof of covered yard, with the stable on one side, and straw and food house, thrashing-barn, and granaries at the end of both—probably the latest improvement in modern homesteads—is seen at the Flemish Farm. There is the old-fashioned thatched and wooden barn, with stabling, granary, and cart-shed arranged around a large working court, in one corner of which stands the comfortable farm-house, at the Norfolk Farm. And there is something similar to this, though an improvement on it in respect to facilities for thrashing and for pig and cattle feeding, at the Rapley Farm. All of these, except the last-named buildings, are fully illustrated by drawings and descriptions in the following pages.

Again, the live stock of these farms is a very good collection and illustration of our best breeds of cattle, pigs, and horses. At the Shaw and Dairy Farms there is a pure-bred

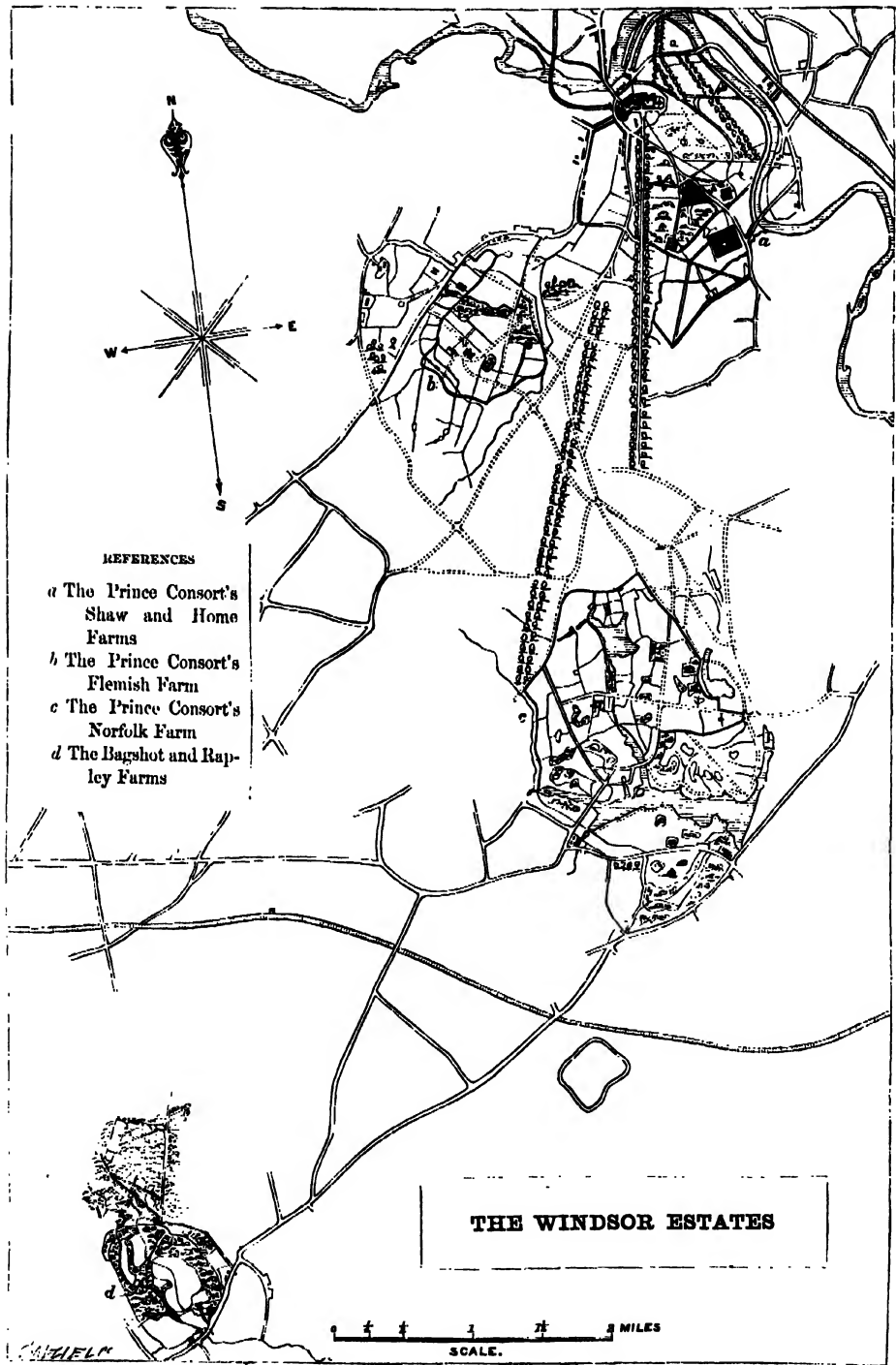
short-horn herd ; at the Flemish Farm one of the best Hereford herds in the country ; at the Norfolk Farm a capital herd of Devons ; and at the Bagshot and Rapley Farms there is a stock of Galloways and Kyloes annually bought for feeding : and from nearly all these herds His Royal Highness had been a successful exhibitor at the Shows of the Smithfield Club and of the Royal Agricultural Society. At the Shaw there is a herd of well-bred Berkshire pigs, and at the Home Farm an excellent stock of the well-known white Prince Albert's Windsor breed. The horse-stock of these farms includes our two best breeds for agricultural purposes—the Clydesdale and the Suffolk : and of the former especially there is a capital breeding stock, as well as many good working teams. None of these farms, unless those at Rapley and at Bagshot be so considered, are especially adapted for sheep husbandry. Though, however, there is no particular merit in their sheep-stock, a good deal of interest attaches to its management, and to the practice of shed-feeding, which has been adopted for several years on the clay-land at the Shaw.

Leaving now the stock for the tillage and cultivation of the soil, we have over all these occupations admirable illustrations of the advantages of land drainage, a good deal of experience of late years in cultivation by steam power, and a large and long experience in the use of manures.

There is every variety of soil on these several estates,

between the stiff clay at the Flemish and the Shaw, and the light and peaty sands and gravels at Bagshot and at Rapley: and an account of the improvements which by the means enumerated have been effected on them during the tenancy of the Prince Consort, is in fact a history of the agricultural improvement of all the soils of England during the past twenty years. His Royal Highness found most of these farms imperfectly equipped with buildings, and undrained; the pastures generally rough and rushy, and in many cases covered with brambles and with gorse; the plough-land on many of these occupations encumbered with hedges, and without sufficient access by good roads; the whole arrangements without system, and the management bearing little reference to that progress of English agriculture all around which he desired to encourage. He has left them in all respects an agricultural example, and his aim by means of them to encourage agricultural enterprise and improvement is obvious throughout.

Let us now walk round them, and examine their buildings, stock, and cultivation in detail. Leaving Windsor by the Long Walk, the Home and Shaw Farms, under the control of Colonel the Hon. Sir Charles Phipps, K.C.B., and the immediate management of Mr. Tait, lie close upon our left, between the avenue and the river. The Flemish Farm lies a mile upon our right, at the farther end of the drive; and beyond it and rather to the left, about four miles from Windsor, lies the Norfolk — the two last being under the management of



Major-General the Hon. A. Nelson Hood, and in the hands of Mr. Brebner. Some miles beyond the Park, in the same direction, eight or nine from Windsor, and close on the edge of the heath, lies Bagshot Park, formerly the residence of H.R.H. the Duke of Gloucester. The Home Farm here and the Rapley Farm close by, were retained chiefly as a game preserve: but they, too, are under the direction of Major-General the Hon. A. N. Hood, the resident manager being Mr. Graham. The Map (page 62) shows the relative positions and distances of castle, park, and farms, and the lines of road connecting them. Of the beauty of the landscape which includes them, of course the Map gives no idea. It must, however, suffice to say, that for the lover of fine timber the drive to the more distant farms is a very great enjoyment.

Nowhere are there older and finer plantations, or more glorious individual trees, than Windsor Park contains. Thanks to recent researches, and very much to those of Mr. Menzies, the present Deputy Surveyor, a definite history attaches now to almost every portion of the whole. Records dating even from Henry VIII.'s time—from Elizabeth's time—from that of James (the first Scottish arboriculturist who interfered in the management of the timber here)—from that of the Commonwealth—from Charles II.'s reign, and those of William and of Anne—can now be quoted in relation to one or other of all the plantations in the Park and Forest. And besides his love of accurate history, which, along with that of

the picturesque, is here so pleurably gratified, the visitor to the Prince Consort's Farms, supposed, of course, to be more especially agricultural in his tastes, has these also gratified as he drives along. He learns that, thanks to measures carried out under the Prince Consort, who was Ranger of the Park, the poorest of rushy bottoms, or, in drier places, ferny covers, have become as well grazed pasture-land as any in the country.

This has all been done since 1851, when the Hon. C. Gore became sole Commissioner of Woods, and Major-General F. H. Seymour became Deputy Ranger of the Park. The improvements in the Great Park date from their appointment, and are the result of their zealous co-operation with the Prince. Step by step the greater portion has at length been deeply drained. And the process of improvement is being still continued at the rate of eighty to one hundred acres annually. Drains four feet deep, at eight- to ten-yard intervals, are dug, care being taken where near trees rather to let them point at the plantation than take them by it; and thus the risk of stoppage by tree roots is reduced to a minimum. The rushes are mown repeatedly every year. They soon disappear under this treatment; and from a full head of shoots to every tussock gradually dwindle, until one or two shoots only from the outside of every plant make their appearance; these last are spudded out by hand, and so that mischief also disappears. The grass after drainage, and the spreading of much of the earth from the drains, became full of thistles. These, how-

ever, were destroyed by diligent mowings and spuddings. And in addition to these means levelled at the destruction of weeds, the growth of the true grasses is encouraged by manuring and other vigorous treatment. As each plot is drained, it receives a liberal dressing of farm-yard dung and bonedust, and is fenced about with high deer-hurdles. During the first summer the grass is mown; and in the second a herd of West Highland cattle is fed closely over the ground, receiving 4 lbs. of oil-cake daily apiece during the time.

It has resulted as the upshot of all these measures, that the greater part of Windsor Park, which only lately was an undrained, swampy, or rushy pasture, is now as well grazed as any land in the country; and the change is a striking illustration of those means of cultivation adapted to the grasses to which the generally poor condition of our pastures is now directing so much attention.

Let us, however, as we pass along, take down some of the many interesting particulars which Mr. Menzies is kindly telling us with regard to the timber in the park. Our drive takes us, in the first place, down the Long Walk from the Castle. This imposing avenue of elm trees was planted about the year 1680, i. e. in the reign of Charles II., to whose officers and their immediate successors much of the present beauty of the park is due. It extends in double rows on either side of the drive, thirty feet from tree to tree, with an interval

of about one hundred feet between the two double rows. It reaches from the Castle gates more than two and a quarter miles in length towards Snow Hill, on a point of which in the line of the avenue stands the equestrian monument of George III. The avenue originally contained about 1,650 trees. Some years ago the Prince Consort called the attention of the office of the Woods and Forests to the decaying state of many of the elms, and a detailed examination by Mr. Menzies in 1858 showed, that of 1,652 trees, the original number, only 712 are now absolutely sound, while as many as 105 are 'seriously' decayed and injured. In a recently published correspondence* the plans are described by which it is proposed gradually to renovate and so preserve this magnificent plantation.

In the portion next the Castle, individual trees, in accordance with these plans, have been here and there cut down—the old roots entirely removed—large holes dug and filled with fresh loam, drainage being first provided; and in these spots very fine young elms, already carefully trained, and more than once transplanted so as to fit them for readily taking to their new position, have been placed. Beyond the double gates, where the soil is more clayey and less congenial to the elm, the removal of trees of stunted growth, or of chesnut and other trees planted where the elm had altogether failed, is to be carried out upon a larger scale. One plantation, including

* Tenth Report of the Commissioners of H.M. Woods and Forests, July 1, 1861.

a double row, twenty-three such trees (i.e. 230 yards) in length, has been already formed. The original stunted growth has been removed, the whole has been deeply trenched over, according to the plan recommended in the report to His Royal Highness the Prince Consort by the late Duke of Bedford, Mr. Sneyd, Mr. Gore, and Mr. Clutton. This includes 'a gradual system of replanting in masses' in this part of the avenue, leaving undisturbed for the present all elm trees which are in health or have any ornamental character, but removing all such of older date as are dead, dying, or unsightly, and without exception all those younger plants with which vacancies have from time to time been supplied, since it is plain that they have not thriven, and that they give no promise of ever making good trees.

In these plantations accordingly, only one of which has yet been finished, the trees have been removed, and the land has been trenched up three feet deep, and left, after drainage, for some time to mellow. Immense quantities of loam from Snow Hill have been brought on to the land, and the whole is thus put in admirable condition for insuring healthy growth when planted. Larch and Scotch fir have been planted in lines four feet from tree to tree over all this space; and oaks, carefully trained by previous transplanting and otherwise, are placed in their midst in the lines of the former avenue, and at the old interval (ten yards) from tree to tree—their actual positions being however in the intervals of those occupied by the former trees. The larch will act as 'nurses' to the young oaks, and the whole

are thus placed under the most favourable circumstances for healthy and vigorous growth.

As a protection from the deer and hares a careful fencing was required; and one which with occasional painting should last for thirty or forty years, until indeed the trees are out of danger, has been devised and erected by Mr. Menzies. It is a six-foot iron fence, seven-barred, the separate bars being received in tubular sockets in the uprights, thus enabling contraction or expansion (without warping) by heat; and up to thirty inches from the ground a wire netting is placed. If fastened to the lower bars of this fence, it would soon have been destroyed by the deer and cattle by their trick of inserting their horns and scratching them against anything of the kind. Accordingly every upright at about thirty inches from the ground is furnished with an arm projecting horizontally about a foot or eighteen inches inwards towards the plantation, and at the end of these arms, protected therefore by the lower bars of the fence, the wire netting is fixed. The whole is a very complete specimen of good and careful management.

Fine, however, as is much of the avenue, and interesting as are the plans in progress for its preservation and renewal, it is not until you escape from it altogether, and reach the farther end of the park, that you are in the midst of the finest trees of which Windsor boasts. The history of many of the plantations here situated is particularly interesting.

Mr. Menzies has done a great deal towards clearing up this history, and his researches amidst parliamentary records and elsewhere with this object in view have been singularly successful. Among other points thus determined, we learn that all the pollarded oaks date previously to James's time. The old law in Henry VIII.'s reign provided that shrouding and pollarding were to be done not oftener than once in seven years; and then nothing was to be lopped or cut larger than a deer could turn over with its horns. James, 'the first Scottish arboriculturist,' put a stop to this pollarding altogether; and thus we have one great and easily recognisable date affecting the age of much of the timber, clearly marked out.

Another date of interest as affecting the park more generally is that of much of the timber standing frequently in rows, though in the midst of the park at its farther end. The land hereabout lies in ridge and furrow, and the date of the trees and of the ridges is the same, being that of certain old leases in the time of the Commonwealth, by which the land was let for arable culture and a rent secured for public purposes. Immediately on the Restoration, under the guidance of a less utilitarian spirit, the hedges were removed, though hedgerow-planted trees were left, and the land was relaid in grass, the ridged form of surface remaining.

It was at this period that the Long Walk was planted. James II. has left no mark upon the park; but his successor

William, and again Queen Anne, especially the latter, did a great deal of planting. And one of the most distinguished of the long list of Rangers was Sarah, Duchess of Marlborough, who held the office forty years, a period when much planting was accomplished.

In the present century, especially since 1810, when the importance of oak for naval purposes and the scarcity of it were beginning to claim attention, a large extent of planting has been done. Some of the finest young plantations, averaging now about forty years of age, lie beyond the park. Anyone desirous of seeing how nature, merely watched, or on rare occasions helped, carries on the pruning of her timber trees, can study it advantageously here; the office of the forester being confined (as he sees the necessity of thinning to be naturally asserting itself) to the selection of the trees to be removed, and of those which shall remain.

In and around the forest, too, as well as here and there within the park, are some magnificent remnants of olden time; individual trees carrying back the eye and mind to periods probably before the date of the Conquest, and previous therefore to the erection of any part of the Castle. One magnificent oak, about thirty feet in circumference, stands by the so-called Forest-gate, which, calculating at the rate of twelve or fourteen annual rings per inch, must be more than 800 years old. Of this, and several other of the most noteworthy trees in the forest, connected with each of which

there is some special history, photographs have been taken by the Earl of Caithness, and these will soon be published in a work on the history of the forest under its successive Rangers, by Mr. Menzies. Materials for this work have been sedulously gathered by Mr. Menzies during the past twelve years in which he has held the office of Deputy Surveyor of the Crown Estates here. Among the latest matters which he was about to submit to His Royal Highness the Prince Consort, was a proposal to place iron pillars by each of the groups, plantations, and principal solitary trees, intimating the date and history of each which had been thus determined. On the Tuesday of the week previous to the Prince's fatal illness, Mr. Menzies waited by command at the Castle to lay before His Royal Highness the materials he had collected for a description and historical account of the forest; but the message was sent how serious its import was little then suspected — that ill health forbade his examination of them.

Beyond Snow Hill, at the farther end of Windsor Park, stand the buildings for the performance of the work which falls within the office of the Commissioners of Woods and Forests to direct, and that of the Deputy Surveyor to carry out. There is here a complete arrangement of buildings for all the carpenter's and other work connected with the whole of the estate. How large a business is here carried on may be gathered from the fact that the superintendence of 14,000 acres of land and forty miles of road is thus included.

There is a turbine driven by pond water from a high level, and a fourteen horse-power engine, originally movable, of Clayton and Shuttleworth's, for driving saw-mills, boring, morticing, and other machines. There is also stabling for a considerable number of horses employed by the Surveyor. A large staff of carpenters and other mechanics is engaged, and a great deal of work connected with the conversion of timber, erection of cottages, &c., is done here.

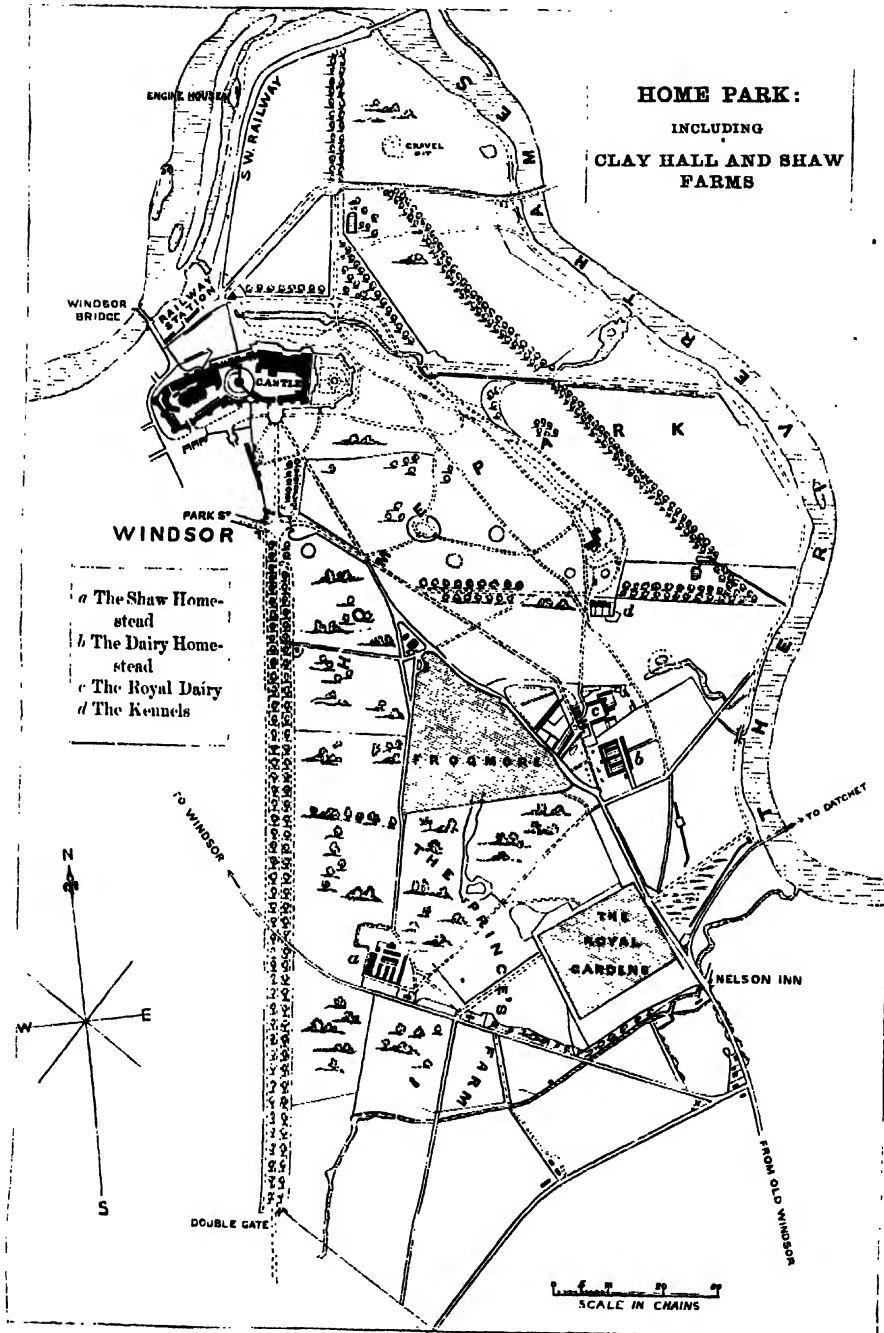
It was the Prince Consort's wish that every labouring man should be comfortably housed within a mile of his work. How different this spirit from that which had actuated previous exclusiveness may be gathered from a remark made during one of the last interviews at which the Deputy Surveyor received the instructions of his Royal master. — 'You may depend upon any suggestion of that kind having my best support when it comes officially before me.' Accordingly groups of cottages have been erected on the outskirts of the park, where provision for comfort by good-sized living rooms, with an adequate number of bed-rooms, has been united with extremely picturesque elevations and exteriors under the designs of Mr. Teulon the architect. To these reference will be made in the sequel. Our drive through the park has in the meantime rather led us astray from the purpose with which we started of describing the Prince Consort's farms in succession.

1. THE PRINCE CONSORT'S SHAW AND HOME FARMS.

As already stated, many important agricultural subjects have long been well illustrated on the Windsor Farms. Nowhere else, within so small an area, are so many excellent illustrations to be seen of the various styles of building suitable for the Homestead. Hardly anywhere is the value of tillage and land drainage as aids to fertility better shown than on the clay land farms of the series. The fertilisation of the land by the direct application of artificial manures, and by the feeding of live stock so as to enrich the natural manure from stables and yards, is carried out with energy and judgement. The importance of pedigree in breeding stock is exemplified in the Short-horn, Devon and Hereford herds, which are kept on the Home, the Norfolk, and the Flemish Farms respectively. And a great deal of useful experience has on all the farms, whose soils vary from the stiffest clay to the lightest sand, been acquired on the equally important subject of plant cultivation. One or other of these subjects will be referred to in detail in our successive accounts of these farms; and the description of the Shaw and Home Farms, which are so well equipped with farmeries, may be appropriately prefaced with general remarks on the theory and construction of farm buildings.

But first, as to the history of these, the nearest of the holdings to the Castle: they have been the property of the Crown

THE PRINCE CONSORT'S FARMS:



now for many generations—the latest acquired portion having been the Shaw Farm, occupying with the Clayhall lands the southern part of the Map, on page 74. This was obtained by purchase 200 years ago from the former owner, a Frenchman. Mons. de Shawe, whose name thus still attaches to the land: The Home Park was, till within the past twenty years, divided by the public road to Datchet; but this, on the formation of the railway across its northern end, and in consideration of certain other advantages then ceded to the public, was at that time diverted to its present route farther from the Castle. Till 1849, when the Prince Consort took them in hand, the Home Farm included merely the park and grounds of the Castle, and the Shaw Farm had been an appanage of Frogmore, formerly in the occupation of H.R.H. the Princess Augusta. On the death of Her Royal Highness in 1840, Mr. Watkins, who had long had the management of it, took the farm for a few years, and he was succeeded by Mr. Cantrell.

The Prince became the tenant of it and of the Home grounds in 1849. The whole is now a continuous estate, including the Royal Gardens and the Frogmore Grounds, the position of which is shown by shade lines on the Map. It was at first, along with the Norfolk and Flemish Farms, under the immediate direction of the late General Wemyss, to whom the credit is due of having advised the Prince Consort both to take the Shaw Farm into his own hands, and to build the new homesteads both there and on the Home or Dairy Farm.

The Shaw Farm includes 308 acres, of which about 120 are arable; and the Home Park amounts to 540 acres wholly pasture, of which, however, more than 120 acres are occupied by pleasure-grounds, plantations, gardens, buildings, and roads.

The estate includes several varieties of soil. The southern portion is a stiff adhesive soil upon the London clay formation; the Thames side meadows are good alluvial grazing grounds; the upper pastures of the Home Park next the Castle are on the chalk. For the combined farms a sum upwards of 1,000*l.* a year was paid in rent and taxes by the Prince Consort, who took them in a very wild and unequipped condition. Besides providing, of course, the proper farm capital invested in its cultivation, he also contributed upwards of 6,000*l.* towards the two sets of farm buildings which are erected on it, and which we have now to describe—prefacing, however, our account of them with the following remarks on farm buildings generally.

FARM BUILDINGS.

The original purpose of a farmstead is *shelter* — shelter for the horses and implements employed in the cultivation of the land — shelter for the produce of the land thus cultivated — shelter for the live stock fed upon some of that produce. A stable and a barn were from the first the essential parts of a farmery. The implement shed came much later. The granary was frequently but the barn's floor, on which the gradually accumulating store of grain lay in its own chaff as the flail added daily to its quantity; to be finally cleansed and sent to market when the work of thrashing was completed. The straw lay exposed in heaps close by. The live stock were either folded in the turnip fields or foddered in the pastures, or fed on straw in yards. So far from being the last, shelter for live stock is now the first consideration with

the farm architect; and this is quite in keeping with the true theory of the subject. What that theory is may be understood from the following statement of it:—

Agriculture is for the most part done out of doors. The difference between the wilderness and the cultivated field is little more than one of guidance and degree. The same living seed, the same porous soil, the same vegetable refuse as manure, the same rain-water, air, and sunshine, are the causes everywhere of vegetable growth. In the field, indeed, the seed is chosen, placed, and covered; while on the waste it is scattered broadcast by the wind, and lies upon the surface: in the one the soil is broken, pulverized, manured; in the other, it is softened by the rain and thaw, and receives its annual dressing only of fallen leaf. In both, however, the natural agents are the really efficient ones; the cultivator does but choose the plants on which they shall be brought to bear, and so prepare the soil that their influence shall be the more productive.

The buildings of the farm, therefore, to begin with, are merely houses for the farmer and his labourers, and shelter for his implements and working cattle. So long as only plants are cultivated, agriculture is just a series of operations—drainage, tillage, and manuring—which only give effect to the natural influences of rains, and air, and sun. Well-arranged plantations sheltering from wintry winds in spring—deep drains enabling the descent of the first warm showers, and thus improving the underground climate at the season of most vigorous growth—tillage deep and perfect, multiplying that inner surface of the soil which represents at once the pasturage of the roots of plants and the store-room of their food—all these do but intensify the operation of nature's fertilising agents; and the sowing machine and hoe confine their influence to such plants as are worth cultivation. But so long as the farmer merely cultivates these plants, he wants no shelter for them. No more buildings are needed on their account than are needed for the wild plants of waste places. And even when he gathers in their fruit, which nature does not do—excepting shelter for himself, his labourers, and his tools, but little help of this kind is required. Barns are going out of fashion. The crops of wheat and other corn are heaped up in stacks upon the stubble, and thatched against the rain; carrots and potatoes are pitted in the field. In the one case the thrashing machine is drawn up beside the rick, and sacks up its grain ready at once for the market; and in the other the measure and the market cart carry off the roots immediately for sale. In neither need the produce once be housed.

It is not for the sake of plants, but for the sake of animals, that we require

the elaborate and well-furnished homesteads which are described in these pages. And the reason is plain. The air, which is the very feeding ground and nurse of plants, is the solvent and destruction of the animal. It is as necessary, indeed, to animal life as it is to vegetable, but in a very different way. If growth be in both cases as the erection of a building, the air is in the one case the very material which the builder uses, while in the other it is useful chiefly in burning waste stuff out of his way, and it is likely at any time to extend its ravages and destroy both the raw material he employs and the result of his labour. A living plant upon the ground exposed to air, and rain, and sunshine, increases and produces—a living animal similarly placed becomes emaciated, dies, and disappears. It is but a moderate estimate of the ordinary rate of movement in the air from which we must conclude that during its summer life there beat on the surface of every square inch of green leaf the particles of several hundred thousand cubic feet of air—enough to burn up hundredweights of wood—but instead of being consumed, the plant is fed by all this air. Had so much passed by every inch of surface presented by the lungs of a sheep or of an ox the animal must have been destroyed; the food it ate would have been as completely burned as if passed through a furnace, and the ‘furnace’ walls themselves would have yielded to the flame. Of course nature provides that so much air shall not be allowed to act upon the animal; the quantity it breathes is regulated by the capacity of its lungs—and the quickness of breathing depends, among other causes, on the exercise it takes, and on the coldness of the air; but it is on our power of influencing this process, and of diminishing its destructive effect, that the economy of the meat manufacture chiefly depends. And it is thus a capital point in the theory of farm buildings that air, which is the food of the living plant, is the solvent of the living animal.

Farmeries (if we except the granary) are meat manufactories. Look at the Plans given in this volume—you will see every apartment labelled ‘cow-house,’ ‘feeding boxes,’ ‘covered yards’ for cattle and for sheep, ‘pigsties,’ &c. The object is to feed in shelter, amid drier, warmer air than can be had outside. There is less waste in feeding—a smaller portion of the food is used as fuel—the air is less destructive.

The provision of accommodation for the feeding cattle is thus the main purpose now-a-days of farm buildings, and on the nature of that provision depends the style and general character of the homestead. You may adopt ‘Hemel’ feeding, which consists in placing the feeding animals two and two in small yards, each with a shed capable of accommodating two with comfort; these sheds are littered three or four

times a week, and the dung and wet straw are thrown out and suffered to accumulate in the yards. Or you may adopt the more wasteful practice of feeding larger numbers together, in larger open yards with sheds at one end — which is a common plan in the earlier stages of the process. You may adopt Stall-feeding, common under circumstances of limited room, where every ox is tied by the neck to one spot or to one division of a food-trough along the side of a shed. Each is allowed a width of 4 or 4½ feet, and where the system is best carried out, they have a gang-way ahead of them, a space of 4 or 5 feet wide behind them, and a high roof overhead; the stalls are littered every morning, the dung and wet litter being removed to the yard; and the bedding is again examined in the evening, and the driest parts of it are shifted towards the middle of the lair. And there is the practice of Box-feeding, in which the cattle are placed in a railed division of the roofed floor, each being allowed a space of about 9 feet by 10 feet in which to move at liberty; they are littered every morning with from 16 to 20 lbs. of long straw, or long straw chaff, and the corners of the bedding, where it remains the driest, are every evening pulled into the middle. The soiled litter accumulates under the cattle at the rate of 6 or 8 inches a month, and their troughs, supported by pins at either end, are raised as the flooring rises from which the animals feed. The trough, it may be mentioned, is most conveniently supported on two pins at each end: when both are in, its position is fixed; when the upper ones are withdrawn, it turns over and hangs bottom upwards till the next meal, in a position that will insure its cleanness. Lastly, there is the practice of feeding in covered yards, where a roof shelters from the rain, and the litter accumulates, being spread so as always to furnish a dry lair — the roof being at the same time high enough to insure fresh air and ventilation. For the younger cattle open yards are perhaps the next best thing to the open pasture; for fattening stock of full age complete shelter is necessary to economy and profit, and it should be combined with adequate liberty and a dry lair, as it is in box-feeding, in order to perfection.

Whichever plan be adopted, it is certain that the wisest experience indicates most unequivocally the benefit of a dry bed, of pure air, of sufficient warmth, and of moderate exercise. These, together, unite health and economy of food in the most profitable proportion: warmth and restricted exercise diminish the consumption of food, and comfort with moderate exercise ward off disease.

That all the circumstances which chemistry and physiology point out as necessary to the perfect health and the economical growth of an animal are compatible

with either the Box or the Covered Yard method of feeding there is ample experience to show. No complaint is likely to be made of either as to warmth; 16 or 20 pounds of straw daily will keep an animal comfortable on an accumulating lair so far as regards dryness; and the advantages of pure air are more easily insured in box than in stall-feeding—a fact which one who has tried both will at once acknowledge, and which an inexperienced man might expect from a box-fed animal having at least twice the room of one that is tied; his litter, too, being trodden down so hard as effectually to hinder the fermentation by which alone the noxious gases are produced.

We must, however, leave now these general considerations, and recommence the work of description. The following are the results of our discussion:

A modern homestead is an establishment for the manufacture of mutton, beef, and pork—enabling the feeding of live stock with less expense of labour and of food. The true principles of construction and design have long been known. The connection in *fact* of all such portions of the buildings as are connected in *use* saves labour; and covered yards, boxes, stalls, providing a sufficiency of healthful exercise, perfect ventilation, and warm shelter, economise the food of feeding cattle. The combination of these two leading principles is now attempted by all good designers of farm-buildings. To these must, however, be added a third consideration, which has latterly come to be considered of almost equal importance—namely, the shelter of the manure which is made in these cattle-houses, and its preservation at once from loss by evaporation and from exposure to the rain.

How are these principles carried out upon the Prince Consort's farms?—At His Royal Highness's Norfolk Farm, the homestead represented at pages 156 and 157 was probably the best of those upon the old fashion, which stood when the Prince Consort became the tenant of these estates. Excepting the comfortable dwelling-house, it is built for the most part of wood and thatch, and it includes that leading feature of all the old homesteads—a large square working court, containing the dung-pit, and surrounded by a large barn, a dwelling-house and offices, cart-sheds, and stables, on the four sides of it. In addition to these there are at the Norfolk Homestead a number of subdivided yards and cattle-sheds and pigsties for the accommodation of live stock. But with all the picturesqueness, roominess, and even comfort of this old style, it is plain enough, from the description of these buildings at page 158, that there is a great loss of labour in the conveyance of straw and provender to the yards and stables, and a great loss of fertilising matter by the exposure of all the farm-yard manure to the weather. In the Rapley farm-buildings, on the Bagshot Estate, of which no drawings have been given, the design as described at page 177, is an improvement upon the original form of homestead, the characteristic yard being divided by a central line of building, bringing that class of the animals accommodated in it nearer to their food and litter than they otherwise would have been, and giving shelter, moreover, to a larger quantity of stock than the same ground would otherwise have accommodated.

At the Alverstone farm-buildings already described (page 39), there is the same central yard with surrounding barn and sheds and stables, with, however, greater concentration and less exposure than the plan generally involves.

At the Shaw Farm and at Barton, the latter of which has been represented and described at pages 25 and 27, we have instances of good modern homesteads, retaining to some extent the principle of open yards, providing, however, ample and suitable accommodation for feeding and breeding stock in stalls and boxes, and furnishing good illustrations of nearly all the methods of construction referred to above. The latter of the two is to be preferred for the roomier arrangement of its parts, and for the more direct communication between those of them whose use depends each upon the other, as of the straw barns with the stables, feeding stalls and yards, and of the root store with the cattle to be fed. The former, of which we shall immediately give the drawings, errs in the too closely packed arrangement of its parts; but it is interesting as containing, in obedience to the wishes of the Prince, in its yards, stalls, boxes, hemels, and sheep-sheds—a great variety of appliances for feeding stock, for the purpose of comparison with each other.

At the Home Farm, exclusively for dairy stock, as being designed for an exclusively pasture farm, the principal features are a magnificent house for the accommodation of the cows,

and a large manure house, to which, for the preservation of its fertilising ingredients, the soiled litter from this cow-house is daily moved. For other stock there is ample provision in calves' houses, yards with sheds, and pigsties.

The Flemish farmery is the most compendious of the series, and perhaps the most of all in accordance with the latest agricultural requirements. A covered yard arranged in either stalls boxes or large enclosed spaces, an open yard with shed for breeding stock, and a stable abut upon straw-house, chaff-house, &c., in connection with barns, and thrashing-machine, and granary -- the whole being under one roof. And there is an open working yard, with implement and cart-shed and cottages close by. These will receive detailed description hereafter. They are the most successful of the series in developing those principles of arrangement and construction already named; and, in fact, the relative merit of these farmeries appears to increase pretty nearly in the order in which we have named them.

The sketch on the following page represents the Shaw Homestead as seen from the grass field between it and the Royal Gardens. On page 85 there is given a plan of these buildings, with a scale from which their dimensions may be learned, and an isometrical projection representing the height, roofing, and arrangement of the different parts.

These buildings were erected in 1853 from the designs of Mr. G. A. Dean, the architect, to whom, under General Wemyss,

the Prince Consort communicated his desire on the subject. His commands were that 'plain and substantial buildings should be so arranged that each description of stock might be kept and tended apart from the other, suitable aspects being given to



SKETCH OF THE PRINCE CONSORT'S SHAW HOMESTEAD

REFERENCES TO LETTERS ON THE PLAN

EAST RANGE

- a* Cart and Wagon-sheds
- b b* Cart-horse Stables
- c* Harness-room
- d* Chaff and Corn-bins
- e* Hay and Corn-shed
- f* Drill-shed
- g g* Men's Living Rooms, with Sleeping Rooms over, and Clock Tower
- h* Implement-shed

NORTH RANGE

- i* Fore-man's Cottage
- j j* Steward's Stable, Gig-house; and Hospital for Sick Stock
- k k* Poultry Department
- m* Poultry Woman's Cottage, by the entrance from Her Majesty's Rooms to the Farm Offices
- l l n o* Blacksmith's, Carpenter's, and other Shops, Wood-yard, Saw-pit, &c.

WEST RANGE

- A* Corn Bay
- B* Hay Bay
- C C* Cut hay and straw

- D* Corn-mixing Rooms, Thrashing-machine, and Straw-bay
- E* Sheds for Corn to be thrashed and for Chaff from Machine
- G* Boiler-room
- H* Coal-shed
- I* Artificial Manure-shed
- J* Boiling-house

PIGGERY DEPARTMENT

- K K* Open Shed, and Sties with Yards for Store Breeding Sows
- L* Slaughter-house
- M* Boiler-house, with Food-tank

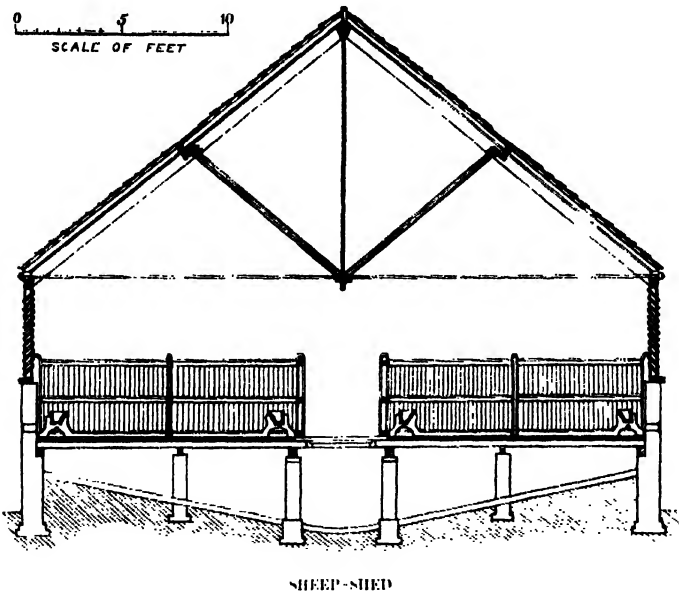
CENTRE RANGES

- p q'* Yard and House for Stallion
- q p'* Yards and Houses for Bulls
- r s* Cow-house and Yard with Calf-pens
- s'* Root-store
- t u* Hemels, with Boxes on the farther side of the Gangway
- v w x* Yards and Sheds for Store Stock
- y* Sheep-shed, with central Gangway and terminal Food-house at *z*

the several parts, and the arrangement being contrived so as to insure the economical performance of all labour to be done within them.' The design very fairly carries out the Prince's intention. It will be seen that the poultry, the swine, the feeding cattle, the sheep-shed, the stables, are placed in distinct and separate localities accessible with the straw-cart, the dung-cart, or the turnip-cart by roads which intersect the whole. The buildings stand upon a square of ground--- the sides running north and south, east and west, respectively.

The row upon the eastern side includes cart-shed at either end, two-storied lodging house in the middle, and farm-stables. The row on the western side includes carpenter's yard and shed, thrashing-barn and granaries, steam-engine and boiler-house, floor for mixing chaff with pulped roots, and piggeries around three sides of a small square in the midst of which is the food-house for their supply. Between these two north-and-south lines on the east and on the west sides of the square, there are three rows of buildings, with roadways between them, and also between their extremities and the two lines already described. The first on the northern side includes foreman's house, poultry house, and blacksmith's and carpenter's shops. The second row includes a series of boxes, hemels (small yards) facing south, and boxes, with a large root-house for the supply of the whole, where Gardener's and Moody's turnip-cutters are *fixed* and worked by strap from a shaft, to which motion is

given by a small oscillating one-horse steam-engine standing on the floor, steam being brought for it along a pipe from the thrashing-engine boiler-house just across the road. The third row occupies nearly half the width of the square, and its whole length between the two lines of buildings at its east and west ends. It is divided midway by a wide shed, in which shed-feeding of sheep on sparred floors is adopted; and on either side, with sheds at their further ends, are two capital yards for young stock. The sheep-sheds answer the purpose of rapid fattening well. One hundred and fifty Cheviot wethers are fattened in them every season. The floor is divided into pens about 9 feet square, holding six sheep apiece. They receive cut roots and



cake, and thrive fast compared with the progress made out of doors. The section of the building here given shows the nature

of the accommodation; and the size and depth of the tank beneath into which the manure from the sheep falls. Ventilation is insured, imperfectly however, by the louvre boards in the side walls, and the divisions into pens are shown upon the plan. As many as 100 cart-loads of capital solid dung are taken from the tank every spring, and used with great effect on the mangold fields. A principal fault in the arrangement is the imperfect access given to the vault where it accumulates, and from which it has to be lifted through trap-doors in the floor. Owing in all probability to this accumulation of manure and imperfect ventilation, the place, though admirably adapted for rapid feeding, does not turn out good mutton.

The dwelling house, detached from the homestead, and well seen in the sketch (page 84), is now the residence of Mr. Tait, the manager of the farm. It contains a suite of apartments (as upon the Plan) for Her Majesty's use : they are placed at the end of a fine avenue, and together with the steward's house, form a very pleasing and picturesque object. From these rooms the Queen can walk in comparative privacy to the poultry department, and thence through the whole range of buildings.

The various departments of the farmery are separate and well defined. The poultry department is managed without interference with the farm operations, as are also the blacksmith's and carpenter's departments. The barn machinery comprises, besides the thrashing-machine, oat, bean, and cake-crushing

mills, a flour-mill, straw and chaff-cutters, hoisting machinery, &c. The granary is on the third floor, and is furnished with tackle for loading carts outside. The arrangement here is too closely packed for convenience.

In the piggery department, shown at *k* and *m* in the plan, the styes surround the boiling-house, at the back of which is a large tank in which the food is fermented. The central position of this building insures economy in feeding the animals.

The stock yards, shown at *v*, *w*, *x*, are divided into four, for keeping separate, if it should be so desired, distinct breeds of stock, or stock of different ages. The central range comprises the sheep-shed, including the arrangements just described for feeding on an open floor over a tank for the collection of manure.

The bullock-boxes, in the range shown at letters *u*, *u*, are without open yards on the north side, while those on the south possess them. This arrangement was carried out by command, as His Royal Highness wished to ascertain which of the two plans was best for fattening bullocks of various breeds. The provision-shed, *s*' in this range, is well placed for supplying food to animals in the various ranges of the building.

The accommodation for cows is small in consequence of the dairy being at the Home or Dairy Farm. It was therefore intended to keep in this steading only the few breeding animals

intended for exhibition. The bull and stallion boxes adjoining the cow-byre are commodious and well fitted up.

The whole of the buildings are well drained and supplied with water. There are various manure tanks having holes with plugs in the topstones, so that on taking out the plugs, portable pumps may be employed for pumping the liquid either into carts or on the manure in the stock yards as may be desirable.

It is proper to add, that the principal defects in the designs of the buildings are the cramped and confined arrangements of the thrashing-barn and granary; and the long carriage of straw and food to stables and yards. Defects of construction have since been corrected at considerable expense: those which are inseparable from the design unavoidably remain.

We turn now to the homestead of the Home or Dairy Farm, designed and erected by Mr. Turnbull in 1852, which certainly in no degree shares the faults just named. For a nobler, bolder design, fit for a royal farm, has never been erected.

The old Dairy Homestead at Frogmore was built in the form of a square, with the piggeries and other buildings projecting from the north side. These buildings had been built at different periods, as the necessities of the farm required. They were not arranged on any regular plan, and consequently were

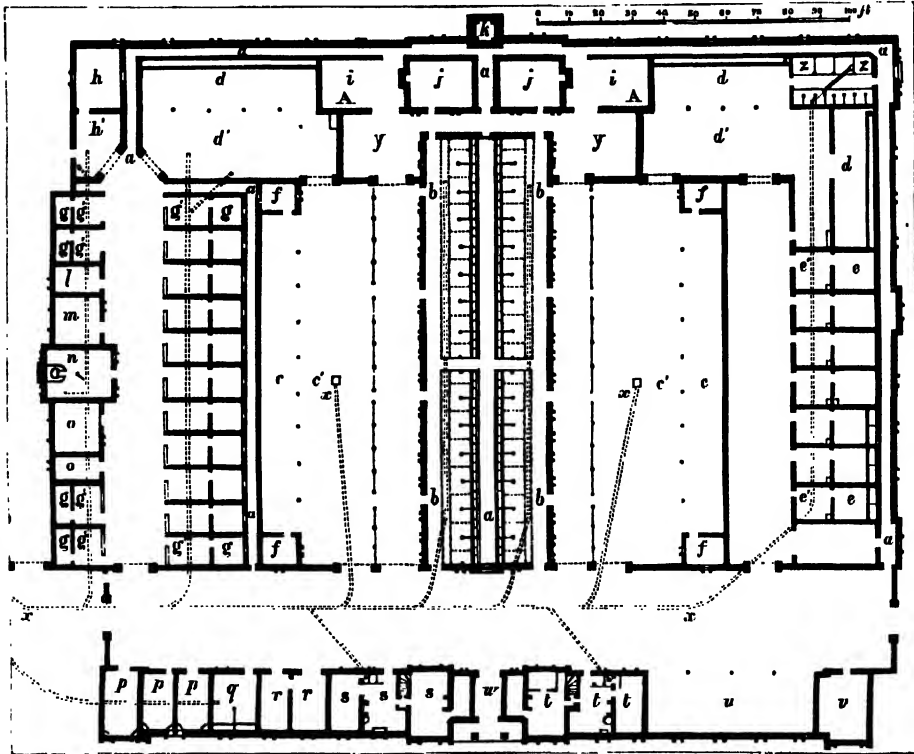
very inconvenient. Sarah, the celebrated Duchess of Marlborough, former Ranger of Windsor Park, had had a garden at Frogmore, where the old homestead subsequently stood, and the principal cow-house had been its orangery. This part of the buildings served its purpose tolerably well, but all the remainder of the farmery presented a most ruinous appearance, and had been often compared to the homesteads of the worst parts of Ireland.



SKETCH OF THE PRINCE CONSORT'S DAIRY HOMESTEAD

The buildings were not only inconvenient and ruinous in themselves, they were also ruinous to the health of the cattle; and in 1845-46 a great many valuable animals were lost from pleuropneumonia and other diseases. This was not to be wondered at, because when the River Thames was flooded the water rose to the level of the floors, and some of the houses could not be used. In addition to these evils, the old houses required a great yearly expense to keep them in habitable repair. For these reasons His Royal Highness the Prince Consort, in 1851, resolved

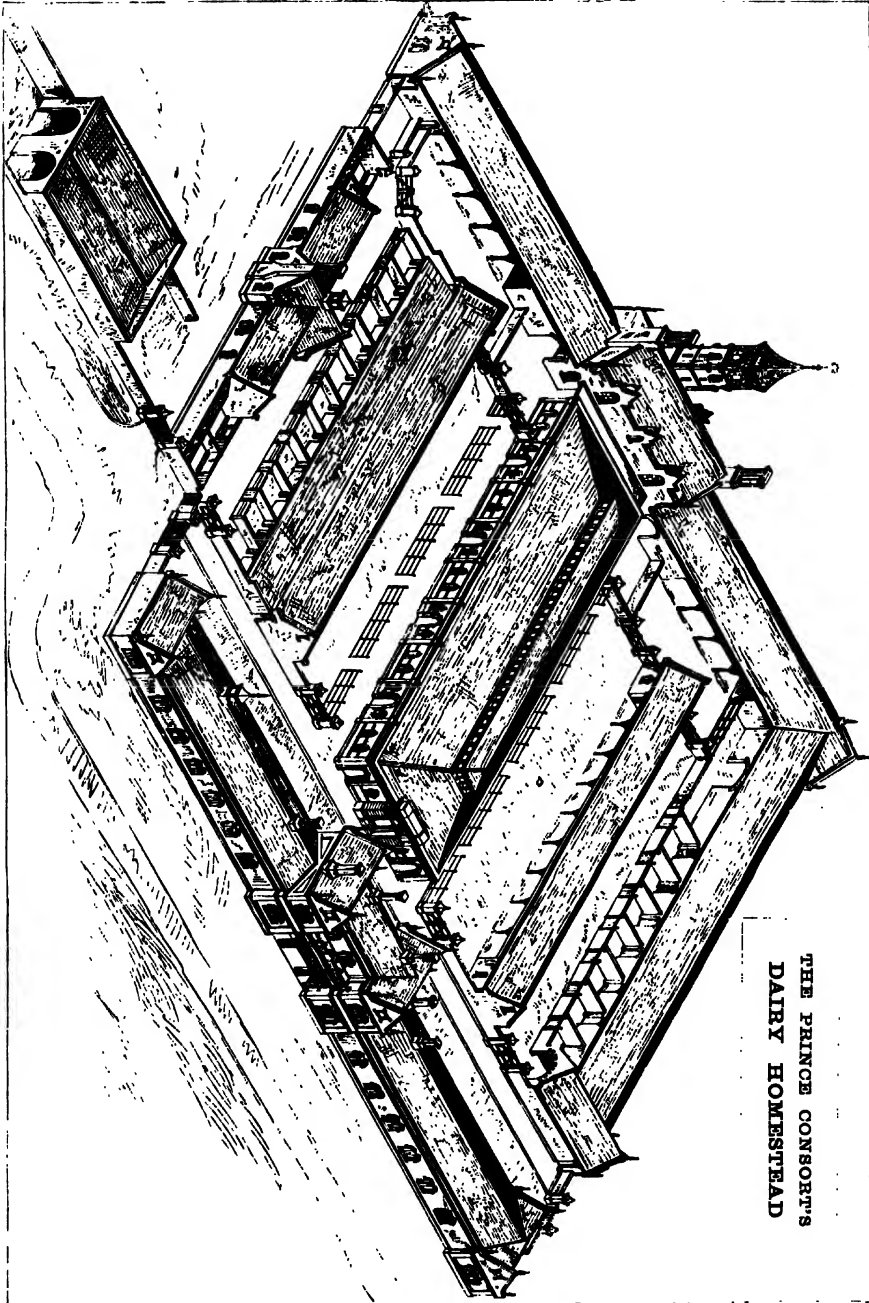
that an entirely new farm steading should be erected, suitable for the requirements of this important appendage to the Castle.



PLAN OF THE PRINCE CONSORT'S DAIRY HOMESTEAD

REFERENCE TO THE INDEX LETTERS

- | | |
|---|--|
| <i>a</i> Gangways | <i>o</i> Straw-store |
| <i>b</i> Cow-house | <i>p</i> Horse-boxes |
| <i>c, c'</i> Cow-sheds and Yards | <i>q</i> Stables |
| <i>d, d'</i> Sheds and Yards for Young Stock | <i>r</i> Loose boxes |
| <i>e, e'</i> Hemels for Bulls and other Stock | <i>s</i> Cottages |
| <i>f</i> Calving boxes | <i>t</i> Cottages |
| <i>g, g'</i> Pigsties | <i>u</i> Cart-shed |
| <i>h, h'</i> Yard and Shed | <i>v</i> Hospital |
| <i>i, y</i> Sheds and Yards | <i>w</i> Entrance Archway |
| <i>j, j'</i> Hay-house | <i>x</i> Drainage of Yards and Stables to
the Manure-house which is shown
in the isometrical Drawing |
| <i>k</i> Clock-tower | <i>y</i> Yards |
| <i>l</i> Stores | <i>z</i> Calves' house |
| <i>m</i> Slaughter-house | |
| <i>n</i> Boiling-house | |



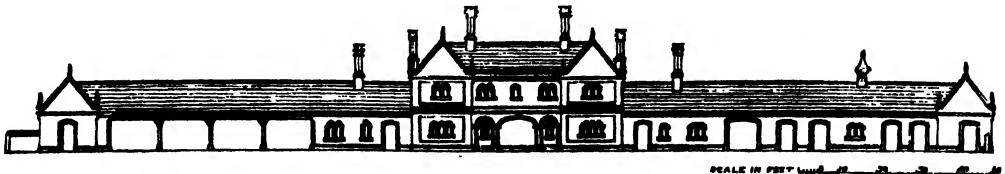
THE PRINCE CONSORT'S
DAIRY HOMESTEAD

ISOMETRICAL PERSPECTIVE OF THE PRINCE CONSORT'S DAIRY HOMESTEAD

General Wemyss had at that time the charge of all the Prince Consort's farms, and Mr. Turnbull received the Prince's commands to consult with the General on the subject; and after considerable discussion the site of the future homestead was resolved upon, and Mr. Turnbull's plans adopted. The works were at once commenced, but not completed until 1855.

These buildings, represented in the sketch as seen from the north-eastern side of them, are also shown in plan and in isometrical perspective in the previous pages.

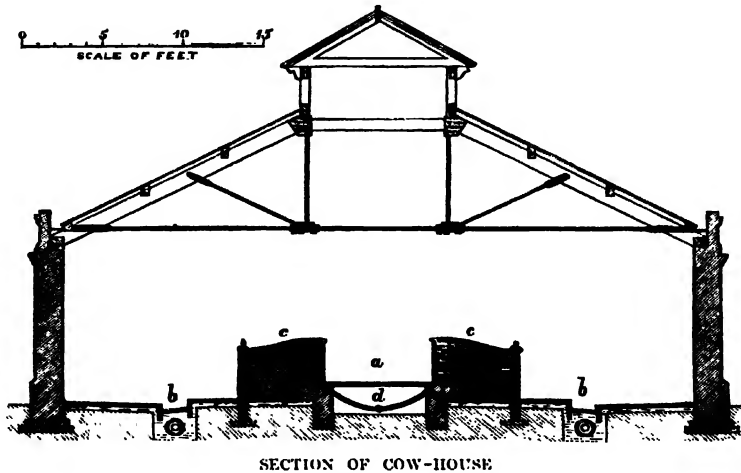
The principal feature in the arrangement is the magnificent two-rowed cow-house with its wide central gangway and lofty roof. The arrangements for watering and for draining, the latter being shown by dotted lines upon the plan, are most perfect throughout the building. The structure consists, it will be seen, of no fewer than five lines of building abutting upon a cross line which connects them, and which carries a clock-tower in its centre. A roadway runs across the other ends of these lines and gives access up the intervals between them, which are used partly as roadways and partly as open yards. On the other side of this cross road, occupying therefore the same relative position



WESTERN ELEVATION OF CART-SHED, ENTRANCE, AND COTTAGES

as the cross line of building on the other side, stands another line with a fine architectural elevation, of which a separate drawing is given : it faces this dividing road. The other elevation of this row is seen in the isometrical drawing, which very beautifully gives the general style of the structure. It includes cart-shed, cottages, loose boxes, and stables. From the southern end of it you walk up the space between the first two rows of which the main structure consists. On your right hand is a series of pigsties, fed from the roadway through Crosskill's hanging flaps. You may also look into them from the gangway separating them from the cow-shed, which is provided with an open yard upon its other side. On your left hand are other pigsties, stores for food and litter, boiling-house, slaughter-house, &c. ; the whole of this department being a most complete establishment for the accommodation of the valuable herd of the Prince Albert Windsor pigs. Traversing the gangway in which the road terminates, you pass yards, *h*, *d'*, and stores for straw and hay, *j j*, to the other side of the building, where is another open yard *d'* provided with sheds, a calves' house, *z*, and hemels *e e'*, for feeding cattle, cows, and bulls. Between this, the fifth ridge line, and the fourth, there is, as between the first and second, a roadway, and on the other side of this roadway is a shed like the cattle-shed of the second ridge line, furnished, as it is, with an open yard. The central line is the noble cow-byre to which reference has already been made. Its dimensions will be gathered from the following section. The stalls are 9 feet

wide, for two cows each, divided by slate partitions. The iron trough for each is divided into three compartments—the central division for water. The raised gangway, *a*, has a stone floor with slabs of slate on either side of it. The pipes, *d*, supplying



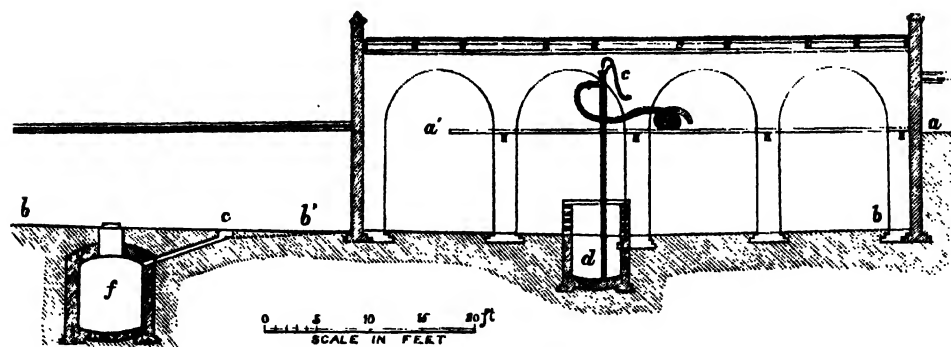
water to the drinking troughs, lie below the passage floor. The stalls and passage floors are asphalted. The gutter, *b*, presents a sloping cross section allowing of the easy escape of water, which falls at intervals into the drain shown in section below it. The plans and sections will enable the reader to follow the general design of the architect, and also to detect many clever points of detail by which Mr. Turnbull has obviated difficulties and avoided liabilities to nuisance.

It will be seen that ready access is given to all the yards and sheds for litter (chiefly fern-leaf mown from the Park, and stored away for its winter purpose); and that from the centres

jj, and *n*, and *o*, where hay, pig food, and meal are stored, easy access is given by the gangways, *a a*, to all the feeding-houses, stables, cribs, and boxes where the stock are kept. The whole of the floors are laid upon a strong bed of concrete, and this has completely prevented rats, mice, and other vermin from burrowing below them. The several yards for cattle have drinking troughs stationed in them, supplied on the self-feeding principle; and there are hydrants placed in various parts of the buildings, with a plentiful supply of water from the Castle water-works in case of fire. The surface water from the roofs and roadways is carried away by a separate set of drains, which are not shown in the plan. The whole of the door and window jambs, the ornamental coping, corbels, terminal pieces, and panels in gables, are executed in terra cotta. This was done by the command of the Prince Consort, who took great interest in superintending the erection of the homestead, declaring when it was finished that he possessed the best cow-house in the world. The reader will easily gather, by an inspection of the plan, how well and with how much economy of labour it is adapted to its purpose. In nothing is this saving of labour more considerate or more economical, than in the provision of cottages for the herdsmen and young men employed in them. These occupy a position, *s* and *t*, on either side of the central archway.

It may be added that the whole of the soakage and drainage of the sheds and yards is conducted to a manure-

house, outside the plan, but represented in position in the isometrical drawing, and also in longitudinal section below.



LONGITUDINAL SECTION OF DUNG-PIT

The soiled litter is every morning wheeled from the road upon the level outside, along the gangway, *a a'*, extending into this house, and tilted over into the space below upon the floor, *b*, from which it is removed by cart, which has access down a sloping road at the other end. The liquid drainage finds its way into the tanks, *d* and *f*, and is pumped out either to the water-cart which takes it out to the pasture land, or on to the heap of manure itself, which being loosely piled in this receptacle is liable to ferment. The closed roof and walls hinder most of the loss, however, to which it is thus liable. The value of this saving will be insisted on hereafter; meanwhile it may be observed that a manure-vault of the dimensions indicated by the plan and section—viz., 30 feet in width by 35 feet in length, and 10 feet deep—is found sufficient room as an appendage to buildings affording stall and box accommodation to about two hundred cattle of all ages, and fifty or sixty swine.

One of the chief features in these buildings evidently is the ample accommodation for pigs—*g g* on the plan. The comparatively smaller white Prince Albert's Windsor breed—from sixteen to twenty breeding sows—are kept here. The pure Berkshire—ten to twelve sows—are kept at the other farmery. In both cases there is ample demand for the young stock for breeding purposes. Mr. Tait gives the preference to the former breed, both for fecundity and for precocity. As much as 700*l.* worth of produce has been sold out of the piggeries at the Home Farm alone in a single year.

The dairy stock, for which ample accommodation is provided on these premises, is for the most part kept here. Nearly two hundred head of stock are now kept—about eighty cows in general of the Short-horn breed, besides ten or twelve Alderneys. The Short-horns of course are not yet all pure pedigree stock—the pure-bred herd has been growing into existence only during the last eight or ten years.

But since 1855 pure Booth bulls have been used over the whole. PRINCE ALFRED, 13494* (successful at the North Lincolnshire Show in 1859, and hired in succession by the Prince Consort, the Emperor of the French, and Lady Pigot)—FITZ-CLARENCE, 14552, and now LORD HOPEWELL, 18239, have been used over both the pedigree cows and the other stock, and the whole are thus rapidly acquiring a high-bred and common family character.

* The numbers are those of Coates' Herd Book.

The pure pedigree herd are descended chiefly from the following cows:—*Alix* (1853) by EARL OF DUBLIN, 10178, bred by Sir C. Knightley, and bought at the Fawsley sale for 100 guineas — *Rachel* (1850), bred by the Prince Consort, by GOLDSMITH, 10277, dam *Matchless* by FITZHARDINGE, 8073 — *Narcissus* (1851), bred by Mr. Trotter, of Bishop Middleham, by 3d D. OF YORK, 10166, dam *Norna* by DUKE OF RICHMOND, 7996, bought at the Hendon sale for 72 guineas — *Coldcream* (1851), another Fawsley cow, also got by EARL OF DUBLIN, 10178, and also purchased for 100 guineas at Sir C. Knightley's sale — *Graceful* (1852), bred by Mr. Majoribanks, got by FACTOTUM, 11455, dam *Gertrude* by GONEAWAY, 10279 — *Bracelet* (1856), bred by the Prince Consort, by PRINCE ALFRED, 13494, dam *Cowslip* by BELLVILLE, 6778 — and *Sally* (1853), bred by the Prince, by LORD FOPPINGTON 10437, also out of *Cowslip*. *Sally* was the second-prize heifer at the Paris Show in 1855. Besides these a few others more recently introduced and some of shorter pedigree might be included. The cows first named have all been good breeders. *Alix* and *Coldcream* have each had six calves, and *Sally* six since 1856. *Graceful* and *Rachel* have had six each, and *Narcissus* five since 1855. They are kept in fair breeding condition. Much of their milk goes to the dairy, and no turnip or other roots therefore are given to them—they have hay in winter and pasturage in summer. A ready sale at long prices is easily obtained for young bulls, and the heifers are

taken into the herd and have already begun to add to its number, as by *Annette* daughter of *Alic*, and *Rosewood* and *Ruby* daughters of *Rachel*.

We give here the families of the two Fawsley cows, as they are probably the chief nucleus of the future herd.

‘COLDCREAM’ AND HER DESCENDANTS.

<i>Coldcream</i> (Sept. 7, 1851), by EARL OF DUBLIN, 10178; dam <i>Pansy</i> by GREY FRIARS, 9172 (bred by Sir C. Knight- ley, Bart. and purchased for 100 guineas at the Fawsley sale in 1856).	1. <i>Duchess</i> (May 30, 1856), by DUKE OF CAMBRIDGE, 12742.	<i>Delhi</i> (Jan. 27, 1858), by GRAND DUKE OF OXFORD, 16184 (has had a calf, since dead).
	2. PRINCE LEOPOLD (Sept. 4, 1857), by PRINCE ALFRED, 13494 (sold to Sir E. Kerrison, Bart. for 40 guineas).	
	3. <i>Carolina</i> (Oct. 1858), by PRINCE ALFRED, 13491.	<i>Datura</i> (Oct. 19, 1859), by FITZ-CLARENCE, 14552.
	4. SIR CHARLES (Nov. 6, 1859), by FITZ-CLARENCE, 14552 (sold to Commodore Stockton, U. S., for 100 guineas).	DUKE OF SUTHERLAND (Dec. 19, 1860), by FITZ-CLARENCE, 14552.
	5. <i>Lady Constance</i> (Feb. 11, 1861), by FITZ-CLARENCE, 14552 (shown as a yearling at Batter- sea).	DUKE OF BEDFORD (Nov. 1861) by BUCKINGHAM, 17471.
	6. <i>Comely</i> (Jan. 27, 1862), by BUCKINGHAM, 17471.	

[*Carolina* and *Datura* have
now (August, 1862) produced
heifer calves to BUCKINGHAM,
17471.]

The second column contains the calves of *Coldcream*, the third those of her offspring; of which, *Duchess*, has had four calves, and *Carolina* and *Datura* one each.

Coldcream, her daughter *Duchess*, and her granddaughter *Delhi* are now all in calf to LORD HOPEWELL, another Booth bull: she may thus be pronounced a profitable purchase.

The other Fawsley cow is *Alix*, of whose descendants we give the following list:—

‘ALIX’ AND HER DESCENDANTS.

	1. SIR CHARLES (April 12, 1856), by DUKE OF CAMBRIDGE, 12742 (dead).	
	2. SIR CHARLES (May 23, 1857), by PRINCE ALFRED, 13494	PRINCE ARTHUR (Nov. 1, 1860), by FITZ-CLARENCE, 14552 (shown at Battersea).
<i>Alix</i> (Jan. 4, 1853), by EARL OF DUBLIN, 10178; dam <i>Laktakia</i> by GREY FRIARS, 9172.	3. <i>Annette</i> (April 5, 1858), by PRINCE ALFRED, 13194.	PRINCE LEOPOLD (Feb. 22, 1862) by PRINCE ALFRED, 13194.
	4. <i>Anna</i> (Oct. 3, 1859), by FITZ-CLARENCE, 14552.	
	5. <i>AJAX</i> (Feb. 23, 1861), by FITZ-CLARENCE, 14552.	
	6. <i>Anemone</i> (Feb. 1, 1862), by BUCKINGHAM, 17471.	

It must not be forgotten that while the value of the herd for breeding purposes, and the revenue from it derived from the sale of bulls, have been regarded in its management, its services as a dairy herd for the use of the Castle were the original reason of its formation. And *Alix* and *Coldcream* were purchased for their actual dairy qualities as well as for their good

descent through a celebrated dairy family of the Short-horn breed.*

In addition to these, *Narcissus*, bought at the Hendon sale, besides breeding three bulls, all sold, has a yearling, *Norma*, by FITZ-CLARENCE, which was shown at the Battersea Meeting: and *Rachel*, bred by His Royal Highness (dam *Matchless*, by FITZHARDINGE, 8073, and g. dam *Myrtle*, by HAROLD, 8131), has four descendants—*Rosewood*, by PRINCE ALFRED, *Ruby*, by the same bull, *Regalia*, by FITZ-CLARENCE, 14552, and *Rosette*, by BUCKINGHAM, 17471. The last is a calf and was shown at Battersea. *Ruby* and *Rosewood* have both bred—and RONALD and ROYAL PRINCE, their calves by BUCKINGHAM, 17471, are now in the herd.

It will be seen from this account that now, with several crosses of Booth bulls, and occasional purchases from other hands, an important herd is gradually growing up.

* Both *Coldcream* and *Aliz* were by the EARL OF DUBLIN, a bull descended from *Princess* by NAPIER, 6283, and through the former from BELVEDERE, 1706—and thus on both sides from herds in which the present pampering system of treating Short-horns was carefully avoided. It is, perhaps, as a consequence of this that the cows descended from him have possessed remarkable milking properties. Mr. Adkins' herd sold last year, at Milecote, Stratford-on-Avon, included a number of his descendants, and the dairy quality of the herd there,

as well as the excellence in this respect of many of the Fawsley cows, is to be attributed to the influence of this bull. The late Earl of Ducie, who was the principal owner, after the Kirkleavington sale, of the celebrated *Duchess* tribe of Short-horns, wanted much to procure a cross of the EARL OF DUBLIN for the *Duchesses* on account of his proved influence on the milking properties of his descendants—an influence which may one day give a special value to the large number of animals in the Windsor herd descended from him.

The Prince had hardly been an exhibitor of Short-horn stock in this country. He was, however, a successful exhibitor at the International Show at Paris, as already named, and had proposed exhibiting at the International Show this year at Battersea, to which end PRINCE ARTHUR, a yearling bull by FITZ-CLARENCE (14532) out of *Annette*, a daughter of *Alix* by PRINCE ALFRED, and two yearling heifers out of *Coldcream* and *Narcissus*, were got ready. His Royal Highness was, however, as is well known, a constant exhibitor of other stock at English shows, and a large case full of medals won by him lies on the table in the Queen's apartment at the Farm House. But to the fortunes of his herds at the shows of the Royal Agricultural Society, and of the Smithfield and Midland Counties' Clubs, attention will hereafter be given in detail.

The Royal Dairy stands near the homestead just described. It is represented in the following sketch.

The old dairy at Frogmore had been built in the reign of George III., and consisted of two compartments—one of them octagonal, and the other of an oblong plan—connected by means of an opening in the division wall. A small tazza fountain stood in the centre of the octagonal room, and the tables and shelves were of Yorkshire stone. But as these rooms did not afford sufficient space for the milk, a temporary lean-to shed had been added. The churning and butter-rooms were detached, on the opposite side of a small yard; and the dairy-woman's cottage was attached to the milk-house.

The drainage of the whole group was into a large cess-pool directly under the windows of the milk-house, and quite close to the wall. Moreover, in the milk-house itself, there was



THE ROYAL DAIRY

a considerable space between the heads of the windows and the ceiling, without top ventilation. The natural consequence of all this was that the milk would not keep here in hot weather, so that in summer time it had to be placed in the cellar of an old house hard by, formerly the residence of the bailiff.

The whole of the buildings were badly planned; the arrangements were unfit for their purpose; exceedingly inconvenient:

and out of repair. Mr. J. R. Turnbull of Windsor Castle accordingly received the Prince Consort's instructions to draw up a report on the best plan for a new dairy, with all the necessary appendages; and the following list of conditions and particulars to be observed in its erection was ultimately approved.

There was to be shelter from the south and west, with free circulation of air around the building; no trees were to be closer than 30 feet from the walls, and any neighbouring shrubs were to be single standards; the situation was, if possible, to be upon a gravel subsoil; there was to be ample ventilation within the building, at both the top and sides of the apartment, with proper means for regulating the same; double windows were to be provided for the exclusion of heat in summer and cold in winter; a plentiful supply of water was to be provided for dairy purposes, and for cleaning and flushing the drains; no cesspool was to be allowed near the dairy; the floor and walls were to be covered with glazed tiles; the tables or shelves were to be of marble or slate; the walls were to be built hollow, and the roof was to be made so that vicissitudes of temperature should not affect the milk.

These particulars were determined on as the conditions of any design that might be prepared; and the architect was instructed by the Prince that while His Royal Highness wished to have an ornamental dairy, no beauty of ornament would compensate for want of every-day usefulness.

The old bailiff's house at Frogmore was converted into a cottage for the dairy-woman, and it was resolved that a new dairy should be erected on the north side of it. Mr. Turnbull's plans founded on these instructions were made, and approved by the Prince, and the works were begun about Midsummer 1858. The site of the building is dry gravel; the floor is laid upon brick arches, with an empty space about three feet high below the arches. The external walls are hollow, with ventilation. The drains are of glazed tubular pipes, and provided with means of efficient flushing. The roof is boarded and covered with asphalted felt, over which the laths are nailed for the tiles; the inside of the roof is lathed and plastered, having ceiling joists fixed below which carry the lower ceiling; and the space between the outer and inner lath is ventilated. The floor is laid with tiles of an incised pattern, with a rich majolica border, presenting the appearance of a Turkey carpet, and it is both beautiful to the eye and agreeable to walk upon. Below the tables, and extending their whole length, are reservoirs about two inches deep, laid with tiles, to contain a flowing stream of cold water, and provided with arrangements for filling and emptying. This arrangement preserves the coolness of the room in summer. The walls are covered with tiles of a white ground, carrying a star pattern in mauve colour, and the whole is enclosed by a border of tiles bearing a running pattern in green and white. Several bas-reliefs in majolica are also introduced on the walls, the subjects being agricultural and descriptive of the four seasons. The walls

are crowned by a frieze and cornice, executed in majolica, the former of elaborate and flowing design. Medallions of the Royal Family are introduced, supported by sea-horses, alternating with shields bearing monograms, dolphins, &c. The cornice is enriched by a running pattern in majolica, representing the leaves and fruit of the orange. The sloping part of the ceiling, which extends up to the roof-tie, is painted and enameled, with a pattern of extreme beauty and delicacy. The soffit or flat part of the ceiling under the roof-tie is filled with majolica panels in the manner of coffers, a number of which are perforated to afford a passage for the air to and from the ventilator above; and the sunken ground of the remaining panels is coloured, so that both present a uniform appearance. At either end of the dairy is a fountain of majolica ware, designed by the late Mr. Thomas, rising from a shell supported by a heron and bulrushes. And on the south side of the dairy is a fountain in statuary marble—a water-nymph pouring water from a jar. The tables are all of white marble, the frames and supports being tastefully decorated in colour, with Belgian and Devonshire marbles. The windows have double casements, the inner filled with stained glass, representing daisies and primroses, with a border of may-blossom. These casements open for ventilation, and there is also top ventilation by a syphon ventilator, on ‘Watson’s principle,’ which externally forms a turret, rising from the roof. There are two recesses on the south side, and one on the east side, lined with tiles of an elegant pattern, and fitted up with orna-

mental racks, on which are exhibited some fine specimens of old china. The roof is supported by six ornamental pillars, on the top of which are clusters of small twisted shafts, carrying the ornamental arches in connection with the ceiling and roof; the pillars and all the splayed parts of the ceiling and mouldings are richly decorated in colour and highly enameled.

The exterior of the dairy is in the Renaissance style. It is protected on the south side by the dairy-woman's cottage, and on the west by an arcade of elegant design, with a tastefully enriched frieze and cornice, bearing an inscription that the building was '*Erected in the twenty-first year of the reign of Her Majesty Queen Victoria.*' The windows are formed of Bath stone, and the whole building is surmounted by a frieze and cornice with perforated parapet of lace-like pattern, the arms of Her Majesty being introduced at one end of the building, and those of the Prince Consort at the other. The roof is covered with red and blue tiles in alternate rows, and finally surmounted by a handsome octagonal turret ventilator, terminating in the crown and orb. The sides of this turret are filled with elaborate perforated panels, on which are introduced the arms of Her Majesty and the Prince Consort.

The old bailiff's house, converted into a cottage for the dairy-woman together with churning-room, scullery, &c., has been altered, its exterior being brought into unison with the new building, and provided with similar windows and roof, and a handsome bracketted cornice.

The plans and general arrangements for the dairy were designed by Mr. Turnbull. The designs for the internal decoration were by the late Mr. John Thomas, sculptor and architect. Mr. Thomas received the commands of the Prince Consort for the various decorations, and the designs were repeatedly altered under the direction of His Royal Highness, nothing having been carried out without specimens, embodying his own suggestions, having first been submitted for his approval; and every detail, both of colour and of form, underwent a most careful revisal by him, before they were finally carried into execution. It may also be worth recording, that every portion of the designs for these decorations is original, and that they were manufactured by Minton and Co., expressly by command of the Prince.

There has been thus provided an apartment some 36 by 20 feet, and about 20 feet in height, with marble shelving all around it and marble tables in the midst, on which white milk dishes stand. There is accommodation for about 240 gallons of milk, in 114 dishes of white ware, on the double central and marginal marble shelves. The whole is as perfect a combination of colour, form, and lustre as was ever provided for the purpose which it serves, and which is observed in the design throughout.

The utensils are of the best common kind—common barrel churn, &c. An accurate account is kept of the milk, cream, and butter which pass through the dairy—the dairy book containing columns in which are daily recorded the number of cows

in milk, the quantity of milk brought in at morning and at evening, the quantity of cream obtained daily, the quantity churned, and the number of pounds of butter they produce. A daily record is also kept of the quantities supplied to the Castle under all these heads.

It is right that more particular reference be made to the two breeds of pigs which are kept on these farms. The white Prince Albert's Windsor breed are descended from the stock of the late Earl Ducie, Mr. Wiley of Yorkshire, and Mr. Brown of Cumberland. They are a white moderately large breed of great precociousness; and the high prices obtained for young stock are justified by the many prizes received at both the Royal Agricultural Society's competitions, and those of the Smithfield Club and the Midland Counties' Association. The Berkshire breed kept at the Shaw Farm are descended from the stocks of Mr. Hewer of Sevenhampton and the late Rev. C. James of Devonshire. For these also high prices—8*l.* to 10*l.* for the young boars—are obtained; and both are a source of large revenue to the farms.

Our account of the live stock of these farms will be incomplete if no reference be made to the flock of Cheviots which Mr. Tait, the resident manager, has introduced with great success. Two hundred ewes are annually brought from the North and crossed with the Leicester ram—one of the results being the entire freedom of the flock from foot-rot, which when a South Down flock was kept, used to be a great plague. The lambs and draught

ewes are fattened in the boarded sheep-shed already described. The main purpose of the flock is to feed down the grass land nearest to the Castle, over which the dung-cart is not taken.

The horses of these farms also deserve a notice. They are of the pure Clydesdale breed—six of them brood mares. BRITON, one of the best stallions of the breed, having won the Highland Society's prize in his class in 1855, and the English Agricultural Society's prize at the Chelmsford Meeting in 1856, was purchased in 1855 for the Prince Consort, at the price of 250 guineas, and has since well earned the large sum given for him. The colts by him realise high prices, several having been sold for 100*l.* and 150*l.* each. The Prince had been frequently successful as an exhibitor of these horses at the English Agricultural Society's shows. His last act as the tenant of the Shaw Farm, about three weeks before his death, was to direct Mr. Tait to nail up over the stalls the premium cards which had been placed over two of his horses at Leeds, and which had lain till then in the farmhouse unattached.

The work of the farm is done by five pairs of these horses—a large number for the extent (120 acres arable and 600 pasture), and more than would be needed were it not for the considerable extra labour connected with roads and estate management. They are managed on the Scottish plan, the men working during the full summer day—from 6 to 11 and again from 12 to 5. They are worked hard and well fed, receiving two bushels

of corn a week, and a daily feed of beans in addition during seed time and severe work, with as much hay as they will eat.

The live stock of the farm, thus, in all, includes about 200 head of cattle of all ages, 400 sheep, 120 swine, 20 horses, colts, and fillies. Besides the buildings and the stock, the cultivation of the arable land should be described. It lies at the southern extremity of the Shaw Farm, and is a stiff soil cultivated on a five-years' course of cropping; namely—1. mangold wurzel and Swedish turnips; 2. wheat; 3. oats; 4. half beans and half clover; 5. wheat. The cropping is thus sufficiently severe, only 36 acres out of 120 being in what are generally understood to be “restorative” crops. But, indeed, that term belongs now to an obsolete school of agriculture: for the object of the farmer is to use the soil as a machine as actively as possible, taking from it as great a value of produce in as short a time as he can, and taking care to supply the raw material of the manufacture in quantity sufficient to maintain the yield of the manufactured article.

There is no lack of manure. The Park supplies immense quantities of fern, which is used as litter in the yards; and great store of yard dung is obtained thus and from the consumption of hay by the large dairy herd, and that of hay and roots by the young stock. The arable land is accordingly in a high state of cultivation. Forty tons of mangold wurzel per acre are a common crop, and as much as sixty have been obtained.

The kinds of crop cultivated are the Chiddam and Uxbridge white wheat, the winter oat, which is sown in autumn upon the *cleaned wheat stubble*, receiving in March, over half its extent, a seeding of 20 lbs. of clover per acre, which thus comes round only once in ten years. The other half of the oat stubble is well cleaned and manured, and sown with the common tick bean in the following spring, and both bean and clover stubble are ploughed up for wheat. Lastly, the wheat stubble receives a thorough fallowing and a heavy dressing of dung in the autumn, and is sown next May and June with mangold wurzel (Gibbs' yellow globe) and swedes, also from Messrs. Gibbs, with the water drill, which washes in about 2 cwt. of guano per acre into the drills along with the seed. The seed is thus sown on the flat in rows about thirty inches apart.

The permanent improvement of the land has been carried out not only by roads and buildings, but by drainage; the landlords, H.M. Commissioners of Woods and Forests, giving the tiles, and the tenant being at the cost of the labour. Drains 4 feet deep and from 20 to 30 feet apart, have thus been carried under all the clay lands, at the cost of about 6*l.* per acre. As at first conducted by Mr. J. Parkes, one-inch pipe tiles were used; when the work fell into the hands of the late Mr. Wilson, who assumed the management of the farms under Sir Charles Phipps after the death of General Wemyss, a larger tile was used with less risk of injury and stoppage. Besides drainage, heavy dressings with chalk and lime composts and then with bone dust and other

manure, followed by close feeding with cake-fed Highland cattle and sheep, have effected an entire change in the character of the pastures, which, formerly marshy, poor, and rough, are now well grazed, sound, and fertile.

No better illustration of the condition of the land, and of the methods by which its character has been so improved, can be given than in the words of the late Mr. Wilson himself, in the following report for Sir Charles Phipps, to be presented to the Prince Consort, which he drew up at the close of the last year of his charge :

REPORT FOR THE YEAR 1857.

The system of management which has been in progress of formation for some years, is now in full operation, and we only propose to adopt such improvements as experience may suggest or any change of circumstances may render necessary.

The weather during the year 1857 has been perhaps more favourable for agricultural purposes than any season in our remembrance. The hot dry weather in the early summer injuriously affected the hay crop, pasturage and turnips, and during the excessive heat the cattle made little or no improvement; but the mangold has never before been so good, and the autumn rains were followed by such fine mild weather, that the forage has been most abundant, and consequently a saving in the consumption of hay has been effected.

The corn crops have also been very superior. The average of the several crops on this farm may be stated as follows:—

	Per Acre		Per Acre
Wheat	42 bushels	Mangold	42½ tons
Beans	53 ..	Swedes	11
Oats	86 ..	Hay	

These crops compare favourably with those of East Lothian, which is so highly farmed; the following being given in the statistical report as the averages of that county in 1857, viz.:—26½ bushels of wheat, 45½ of oats; and 19¼ of beans.

If we were to sow the more prolific but coarser varieties of wheat, which are grown in some of the eastern counties, our average produce might be 10 or 12 bushels per acre greater; but the Uxbridge district being famed for wheat of fine quality, the best always commands a high price. I can also generally sell a considerable quantity to be taken to a distance for seed; and it therefore seems better to grow varieties of good quality. The wheat from this farm topped Uxbridge market for the season, with some that was sold in August, for 72s. per quarter, and weighed 67 lbs. per bushel.

Owing to the improved condition of the grass land, and also to fewer animals remaining to be fattened, when so many are sold for breeding purposes, a smaller extent of root crops is now required, and we are therefore endeavouring to grow a greater proportion of grain, and lessen the necessity of purchasing so much corn and straw. In 1858, 62 acres will be in wheat; 11 in oats; 4 in barley and tares; 7 in beans; 12 in clover; 26 in roots.

The land intended for roots in 1858 was ploughed as soon as the wheat was cut, and after being cleaned received a dressing of farmyard manure. About twenty acres of this field have since been ploughed with six horses twelve inches deep; and the remainder was ploughed with four horses nine inches deep, followed by a sub-soil plough drawn by four horses, which moved the earth to the depth of eighteen inches from the surface.

In accordance with your instructions, we have, while progressing with the improvements of the land and stock, endeavoured to conduct the business of the farm in the manner that would produce the greatest profit. We may add that the fall of price of live stock in the latter part of the year, before our principal sales were effected, materially affected both the receipts and annual valuation, and consequently the profits also on the business of the year.

The same system has been adhered to in regard to the management and sale of live stock as formerly, viz.:—The best male animals are used that can be obtained. The young male animals that are fit for breeding purposes are sold whenever a fair price is offered. All the best females are retained for breeding purposes—and the worst sold whenever there are too many on the farm. It is sometimes necessary, for the sake of a connection, to deviate from this rule when a fancy price is offered for female animals, but this should always be an exception and not the rule. We have not experienced any falling off in the demand for good animals, and during

the year have forwarded stock to Scotland, Ireland, France, Denmark, Silesia, Wurtemberg, and Australia.

Ten acres of grass land have, as formerly, been dressed with fifteen cwt. of bones per acre, and a great extent has been dressed with chalk or farmyard manure. Wherever this has been done, the coarser grasses gradually disappear, and are replaced by finer herbage, which the stock eat much closer, and the fields subsequently have therefore a greener and more even appearance. The hill is much improved by the manure and folding which it has received; and as the appearance of the place will be much improved when all the land adjoining the Castle has been similarly treated, I propose to postpone the improvement of the grass lands at Shaw Farm until this has been accomplished.

We find, however, that although the farms produce a large quantity of grass, and the stock depastured are remarkably healthy, yet the animals do not accumulate fat so quickly as they do in several districts of this country. This is no doubt partly owing to the grass having been frequently cut for hay, without receiving sufficient manure. Whatever injury has been sustained from this cause will be remedied by the present liberal system of management; but it is much easier to make land produce a full quantity of grass, than to make it good for fattening, if it has been deficient in this respect in its natural state.

Since Mr. Wilson left in 1858,* Mr. Tait, from Dunrobin, Sutherlandshire, has had the management of the estate. A great deal of the further grassland improvement, referred to in the above report, has since been accomplished by him, and the land is now in admirable condition.

We have described it and its buildings thus fully, believing that both in the management and the equipment of the land.

* Mr. Wilson then entered the service of the late Duke of Richmond, at Goodwood; but he did not long survive. He died in the year 1860, leaving behind him a wide and well-earned reputation for high professional ability and for sterling personal worth.

there is much that English breeders and farmers may most usefully copy.

One word further on the implements employed. Wood's combined mower and reaper used annually over 400 acres of grass and 80 acres of corn — Howard's and Hornsby's ploughs — the Scotch carts both for manure and harvest purposes — Crosskill's and Cambridge's rollers and clod-crushers — the American hay-rake — the hay-tedder, Garrett's thrashing-machine, Gardener's and Moody's turnip-cutters — are the implements in use. About thirty men and boys are in constant work — some of them are employed in drainage work during winter; and of course a larger number are engaged during harvest time. The labour bill is very great, considering the large proportion of pasture land — being about 900*l.* a year for ordinary labour, including of course a great deal spent in draining and in maintaining the condition of roads, and the good order and even polish which a Royal farm must exhibit. And to this must be added about 500*l.* spent in harvesting 400 acres of grass and 80 or 90 acres of corn. The wages paid average 13*s.* apiece weekly to the men.

It may be mentioned that the sewage of Windsor runs to the river in a covered way through the meadows below the Dairy Homestead. No use has hitherto been made of it; and although the methods of disinfecting the valuable manure which thus runs to waste are now sufficiently well understood, yet the

fear of a nuisance as the result of any failure in such an attempt has hitherto forbidden the proposal to turn it to account, by irrigating with it the grass lands along the banks of the Thames, where it could be applied with little difficulty.

Although His Royal Highness the Prince Consort was not here landlord, as at Barton, the other relations in which he stood gave scope for the illustration of his character as an employer and a neighbour. And one of the most interesting of these illustrations was to be seen in the interest which he took in the welfare of the young men whom he employed. One part of the buildings at the Shaw Farm is an eight-roomed house, where a number of them are lodged. It is furnished with a room where they take their meals, and another used as a reading-room and for an evening class.

This evening school is earnestly and laboriously conducted. A schoolmaster, Mr. Bembridge from Windsor, comes at night, three times a week during winter; and the award of a bible or of a money prize at the end of the season is regulated by the attendance of the scholars, of whom twenty to twenty-five are generally present, as well as by the specimens of their work in writing and arithmetic, which have been annually submitted through Sir Charles Phipps to the Prince. We have had the pleasure of examining one of the annual collections of copies and exercises thus prepared for examination. It contained a number of short reports, extremely well written from

memory, of a lecture on the Life Boat, which had been delivered by the curate of Windsor, passages written from dictation as a test of both penmanship and spelling, and examples of various rules in arithmetic,—and the whole was a capital illustration, both of good teaching and of attention. The prize awarded to any of the labourers attending this school was always, in the first instance, a bible, bearing on its title-page the intimation that it was the gift of the Prince; in subsequent years a money prize was given if deserved. In another chapter, a more detailed reference will be made to this very interesting feature in the management of the Shaw farm.

Although, of course, in the daily management of these farms, as in that of others of the series, His Royal Highness could not be supposed personally to interfere, yet the frequent walks taken by the Queen and himself round the two farmeries, his personal inspection of the monthly report presented through Sir C. Phipps, his instructions given with reference to competitions at the national exhibitions, and his frequent enquiries and conversation about the evening school, amply proved his interest in these farms. Their daily management of course lies directly in the hands of Mr. Tait, the resident manager; but it has been seen that everything necessary for the vigorous, neat, and skillful management of the land—men, horses, implements, stock, and buildings—had been provided by the tenant, perfect in *their kind*.

We have shown, then, that the walk round the two Home Farms at Windsor is one of high agricultural interest. Your course from Windsor leads you down the noble avenue of Elms known as the Long Walk ; you pass through the Shaw buildings, and leaving the Royal Gardens on your right, reach the Home Farm, and after admiring its stock and the noble accommodation for them, you visit the Royal Dairy—the Aviary and the Kennels, also well worth seeing, are close by. And you regain the Shaw Farm and the residence of Mr. Tait, by a walk through the now deserted grounds of Frogmore House—beautiful in the magnificence of their timber trees, the smoothness of their grassy glades and slopes, and the mixture of their groves and mounds and ornamental water ; interesting, too, for the mausoleum newly erected in their midst, where lies the body of H.R.H. the late Duchess of Kent ; soon, however, to be more sadly interesting still for another resting place which is being provided, where the remains of His Royal Highness the Prince Consort will lie in the midst of scenes of quiet beauty, and close by those just visited of intelligent activity, both of which he loved so well.

2. THE PRINCE CONSORT'S FLEMISH FARM.

Though receiving for the future the name of His Royal Highness, and justly so, for on none of the farms had there been a greater change during his tenancy of it, the Flemish Farm had, nevertheless, been for many years in the occupation of a Royal tenant. It received its name in the reign of George III., when it and the Norfolk Farm were set apart as illustrations—so they were intended—of the two systems of management known as the Norfolk and Flemish respectively. Since it passed into the occupation of the Prince it has been entirely remodelled; roads have been made; gorse and fern have been removed; the fields have been re-arranged; the old buildings have been removed; a new homestead has been erected. And it has all been drained under the superintendence of Mr. Parkes, 4 feet deep, at the cost of 3*l.* per acre, exclusive of pipes and cartage. The whole neighbourhood, too, has partaken of the improvement. Your walk to it, from the farms just described, is across the best grazed portion of Windsor Great Park, where the great improvements in the grass lands, already described, have been effected by drainage, chalking, and manuring.

Of this last agency a good illustration was afforded ten years ago, by experiments made here under the direction of the Prince Consort, the very satisfactory results of which were described in the Journal for 1853 of the Royal Agricultural Society.

The following report of them is taken from that volume :—

EXPERIMENTS ON TOP-DRESSING GRASS-LAND IN WINDSOR GREAT PARK.

(Communicated by order of H.R.H. the PRINCE ALBERT.)

The land marked I. was enclosed from open pasture and cropped for hay, for the first time. The whole land so enclosed had received during the winter about twelve loads per acre of deer-pen manure, valued at 2s. per load. This manure seemed never to have produced any effect, in consequence of the long drought succeeding its application; and though its value ought to be stated against the crop, when considered generally, it has not been taken into account in the above statement, which is intended to show a comparison between land under two artificial manures, and land of the same description without them.

The land marked II. was a portion of a meadow, which has long been cropped for hay every year. This land received no other treatment than the application of the artificial manures.

Statement showing the Result of Experiments on Grass, in Windsor Great Park, with Artificial Manures, 1852.

Land Experimented upon	Quantity of Top Dressing	Cost per Acre	Date of Top Dressing	Date of Cutting	Produce per Acre	Value at £3 per Load of 18 cwt.	Produce of surrounding Acres	Value at £3 per Load	Balance per Acre in favour of Top-Dressed Land
		£ s. d.			cwt. qrs. lbs.	£ s. d.	cwt. qrs. lbs.	£ s. d.	£ s. d.
I. High Undrained Land.									
One Acre with Guano	2 cwt.	1 4 8	May 22	July 22	30 3 1	5 2 6	8 0 0	1 6 8	3 15 10
One Acre with Nitrate of Soda	2 cwt.	1 17 10	"	"	29 2 0	4 18 4	8 0 0	1 8 8	3 11 8
II. Low-lying Meadow Land.									
One Acre with Guano	2 cwt.	1 1 8	"	July 16	27 3 0	4 12 6	9 0 0	1 10 0	3 2 6
One Acre with Nitrate of Soda.	2 cwt.	1 17 10	"	"	25 0 0	4 3 4	9 0 0	1 10 0	2 13 4

From the above statement the benefit resulting from liberal top-dressing of grass is apparent. The aftermath on all the top-dressed land was also superior to that on the rest of the field, but no difference could be seen betwixt the two sorts experimented with. On the application of guano there seems to be considerably the greatest profit; but as experiments have been tried in other localities in which the nitrate of soda has had the superiority, the explanation of the difference in the effects produced must be sought for in some peculiarity of the soil. In both cases stated above, the soil and subsoil consist of clay, not very tenacious.

It is believed that the difference in the produce of the dressed and the undressed land is greater than may be expected in ordinary seasons, in consequence of the weather and other circumstances having been exceedingly favourable for the application of the manures. No rain had fallen, and there had been constant drying easterly winds from February till May 22, the day of application, and consequently the grass had made no growth whatever. The manures, therefore, on being applied, came immediately into contact with the roots, and on May 26, genial rains commenced, which continued almost without interruption till the day of cutting. The surrounding grass seemed never to make a start all the season, which the smallness of the crop will show, while the top-dressed land improved daily.

F. H. SEYMOUR, Deputy Ranger.

W. MENZIES, Deputy Surveyor.

Since the date of this experiment a large experience in various quarters has been recorded, and especially by Mr. Lawes of Rothamsted, St. Albans, in the same pages, upon the effect of manures on pasture land; and it has been shown that nitrogenous manures, such as ammonia and the nitrates of soda and potash, tend especially to encourage the growth of grasses, while the phosphates, alkalies, and mineral manures tend rather to encourage that of the clover. The whole research to which the above report is a contribution, proves that our pastures, no less than our arable fields, are directly amenable to the influence of management. Though, however, the term 'cultiva-

tion' thus applies to our grass as well as to our ploughlands, and pastures need manuring, drainage, weeding, and may even receive tillage with advantage, just as arable land, yet it is to the latter more especially that the last-named of these cultivative processes is applicable.

The Prince Consort's Flemish Farm, with its clay soil, is a capital illustration of the benefits of the drainage and thorough tillage of arable land, and therefore we preface our account of it by a short statement on these two subjects. Not so much, however, on the methods by which tillage and land drainage are effected, as on the nature of the results thus achieved. It is right to add that this interpolated essay on the subject which the Flemish farm especially illustrates, may nevertheless be altogether passed over. The continuity of the story would not be broken though the next eight pages were omitted.

TILLAGE AND LAND DRAINAGE.

It is no mere alteration of 'quality,' by which a thorough fallow of the land in dry weather fertilises the soil. It is as much by an actual addition of particles in the one case as in the other that tillage is the equivalent of dung. Guano, superphosphate, lime, however, act not only as direct additions of the food of plants, but also as reagents in the soil by which useless matters there, and even mischievous matters there, are converted into food. And so does tillage. The enormous inner surface of the land—that by which every particle of the soil is wrapped about—is multiplied by tillage, and so not only are the particles which it covers laid more open to the influence of external agencies, but they do themselves exert a prodigiously increased activity in their influence upon the air which thus is made to interpenetrate the whole. That air contains the substance of plants. Every

process of putrefaction or combustion fills the air with the substance of once-living plants. And it only needs that by tillage the soil shall be brought throughout its substance into contact with fresh surfaces of air to enable it to extract and treasure up for living vegetables once more the very atoms which have constituted its fertility before.

The Rev. S. Smith of Lois-Weedon, indeed, says that in all clay soils containing the mineral elements of grain perfect tilth dispenses with the need of manuring, and there cannot be a doubt that deep and thorough tillage enables soil to draw immensely on the stores of vegetable food contained in air and rain. Others again, thinking they read their garden experience aright, say that perfect tilth dispenses with the need of drainage; and there can be but little doubt that deep tillage facilitates the operation of whatever drainage may exist, whether it be natural or artificial.

In both these cases the useful lesson is well taught, that it is true economy rather to put the cheap and copious storehouse of Nature's agencies to its fullest use, than by laborious and costly artificial means to imitate expensively their operation. Such a lesson applies, indeed, beyond the *advantages* of tillage to the methods by which tillage is to be obtained. Among the earliest suggestions of cultivation by steam power was that of reducing by its means the soil to tilth at once. The land was to be torn down as the deal is torn down at the saw-mill. Though before the machine it may have been as hard and firm as wood, behind the tool as it advanced at work it was to lie as light and fine as sawdust. But it has at length been found that it is better because cheaper, and more perfect too, to leave this last refinement of the tillage process to the weather, which does it without cost. The land is now torn, 'smashed up,' or moved and thrown about by plough or grubber in great clods and lumps. This is best done in dry autumn weather, and thus it lies till spring. Certainly no climate is better adapted for cheap tillage than the English. The rains and frosts of winter following a dry September and October must penetrate and thrust asunder the clung and hardened masses of the soil. No two particles shall remain adhering to each other, if you only give room and opportunity to the cheapest and most perfect natural disintegrator in the world. No rasp, or saw, or mill will reduce the indurated land to soft and wholesome tilth so perfectly as a winter's frost. And all that you need to attain its perfect operation is, first to provide an outlet, by an efficient drainage of the subsoil, for the water when it comes, and then to move the land while dry and break it up into clods and fragments, no matter how large they be, and leave them for alternate rain and drought and frost and thaw to do their utmost.

Given a clay soil once cleared of all perennial weeds and thoroughly drained, and its cultivation in the future will be a marvel of cheapness and efficiency when compared with its cultivation in the past. For, how many ploughings and harrowings, and rollings, and grubblings have been needed hitherto as a preparation for wheat on such soils? And if by any chance an attempt at growing roots on such a soil was made, what a business and a series of processes it was! A team of horses such as we have in England for clay-land tillage, will weigh, with men and plough, at least 2 tons, and over every 10-inch width, from end to end of every field, this 40 cwt. must tramp and slide in the effort to lift and *loosen* (!) each 10-inch strip of earth. What a contrast to the operation of the steam-drawn plough, resting on two large wheels and weighing altogether some 27 cwt., drawn once to every 40 inches width; by which a deeper and more thorough ploughing is effected! In the former case every operation created the need of another. The team and tool together hardened a floor, below which water could not penetrate; or if engaged in harrowing or in rolling they hardened the earth they were trying to reduce, and so made another operation needed.

Examine any valuation of 'acts of husbandry' to an incoming tenant in a clay-land district, and if the subject is a new one you will be astonished at the multitude of operations, the repeated ploughings and harrowings, the crossings and re-crossings — *e.g.*, 'four times ploughed, thrice dragged, eight times harrowed, twice rolled,' not uncommon in the attempt to grow turnips — the miles and miles of work per acre — the army of horses and tools and men engaged — and the weeks and months of work to which it all amounts. Talk of Romaine's steam cultivator and his 'cumbersome' apparatus, weighing perhaps 14 tons, traversing a 7 feet width at once! — we have in an old-fashioned clay land fallow as much as 14 tons traversing every foot in width — we have a man and boy and team of horses walking at least 60 miles per acre — we have work in September or October, in April, May or June, July, August and September.

It is possible to simplify this work somewhat — we can save both horse-flesh and shoe-leather, and the temper of the farmer too — grow better crops, and save his pocket in the process.

Let this clay land be drained — and there need be no fear of drains 4 feet deep not 'drawing,' if after drainage it be deeply cultivated while the soil is dry. Let us suppose it once cleaned; then, after harvest, cart on what manure or lime or both it is intended to apply; plough it in by steam power and leave

it rough till spring. When dry in March or April put the steam cultivator through it, and it is possible at the same time to harrow it effectually by steam power, and it will at once be ready for any spring-sown crop it is intended to grow, whether grain or green crops, barley, oats, turnips, tares, or mangold wurzels.

There cannot be a doubt that on clay lands especially which have been laid open in fields of at least 30 acres with straight fences, and then well drained, the steam plough is destined to produce a marvellous change in the whole character and productiveness of English agriculture. The owners of the clay lands of this country are indeed at length to be congratulated. Their turn has come at length; and whereas the lighter soils, by marling, sheep-feeding, and artificial manuring, have hitherto been foremost in the march of agricultural improvement—thus contributing more than any other to that increased produce of food which English fields have of late years provided—we may now expect, by drainage and effective tillage, that the stiffer lands will take their turn in front—making the most rapid progress, yielding larger produce, more profit, and more rent.

A light soil is a machine; and as you must provide the rags before you get the paper, or you must feed in the wool before you get the cloth, so here you must supply the food for plants before you can expect a crop. The clay lands of the country, on the other hand, are a strong box already full of treasure. What the owner of this box or the tenant who hires the use of it from year to year requires, is not so much a quantity of raw material to be converted by its means, as by a machine, into material of greater value and utility—but a clever picklock, and skill to use it well, by which to get at stores already there.

Such a picklock now exists—has, indeed, existed always: but it is now applied with unusual energy and skill. It is the clay farm that henceforth will be in greatest demand. In hiring it you take not only the groundwork of a manufactory, as it were, but you have access to a mine. You take not only a given surface whose natural fertility is indicated by the sedge and rush and grass of untouched meadow land, and from which, by dint of air and frost and sunshine, you mow or reap a certain annual crop—but you have a depth of soil beneath that surface which the chemist tells you is full of valuable matter, much fuller than the sand soil is, which only needs skill for its extraction and utilisation. The picklock to this treasure-house is land drainage. Once give rain free passage through this soil, and let it take air through and through it in its train, and an immense quantity of the raw material of our manufacture will be at once provided

from the natural supplies. The material which for light land you must bring from the ends of the earth, is already here beneath the surface; and it only needs for the attainment of fertility that air and rain and light be brought to bear upon it, and free passage of soil-water be provided as a vehicle of it all to the roots of plants.

But the drainage of clay soils has rarely hitherto been thoroughly effected. You dig trenches at 7- or 8-yard intervals, some 3 or 4 feet deep, and through pipes placed there you expect that all the rain which falls upon the field will escape, after gradual penetration of the whole, and filtration past every particle of all this 3 or 4 feet mass of earth. But after this, you cultivate the upper layer of this mass in a manner which interposes between it and the lower layers an impervious floor. Three or four ploughings of grain stubbles before the succeeding Peas and Beans, with long teams of cattle travelling to and fro upon the floor over which the soil and under which the subsoil lies, are an effectual induration, which spoils your attempts at drainage. This floor is fatal to land drainage, and therefore to fertility. It must be broken up, and this can be only done effectually by steam-power. Steam ploughing or steam cultivation, after drains have been dug, is the way to ensure good drainage. Tillage by steam-power under such circumstances is the true picklock, by which the exhaustless stores of food for plants in all clay soils—lying now inaccessible as in a strong box—may be laid open to the roots of plants. The breaking up of the floor which horse cultivation hitherto has laid immediately below the surface, and the breaking up of soil and subsoil, and exposure of the whole to air and rain on its way downwards to the drains, will exert a marvellous influence on fertility.

What, then, are the means by which this steam tillage is to be effected? Mr. William Smith, of Woolstone, Buckinghamshire, employs an ordinary thrashing steam-engine: this he stations in a corner of the field that is to be cultivated; by it he works a double windlass ‘time about,’ one barrel of which winds up a wire rope while the other lets it off, and thus this wire rope is drawn to and fro around pulleys stationed in the corners of the field that is being worked. As a link in this rope his 3 or 5 tined grubber is placed—it is thus drawn from end to end of the field, turned and brought back again, so breaking up the stubble or unploughed land on which it works. This system has been adopted by several makers—Mr. Smith of Woolstone, Mr. Howard of Bedford, and others. In the *Agricultural Gazette* of November 30, 1861, an account was given of many thousands of acres thus cultivated last autumn, at a cost for fuel and wages, and

repairs, of 4s. to 5s. per acre for one-way work. To this must be added the cost of the tear and wear of the rope and machinery and the interest of the capital employed; and the cost of steam tillage on this plan thus amounts to generally 6s. to 8s. per acre for stirring clay soils once, 6 or 7 inches deep.

There is another plan carried out by Mr. John Fowler of Leeds, in which an engine of greater power is used, nominally indeed of 10 to 14 horse-power. It travels along a headland, and from it around a horizontal pulley; underneath it there extends a wire rope to the other end of the field, there embracing a corresponding horizontal pulley underneath a low carriage on sharp wheels, which, sinking into the ground, constitutes an anchorage against a lateral pull. The pulley under the engine has movable rims which grip the rope tightly wrapped around it; and so, as the engine works this pulley, it draws the rope to and fro around the anchor pulley. The engine travels along its headland, and the anchorage travels along the opposite headland, and the rope, drawn to and fro between them, drags as a link in its length a framework of ploughs or cultivators, which thus turn over or stir the land in their course. It is not necessary to go into a detailed description of these cultivating machines and apparatus. It must suffice to say that by means of them some thousands of acres were described, in the paper already quoted, as having last autumn been ploughed from 6 to 8 inches deep, for from 5s. to 7s. per acre. To this must be added tear and wear of rope and machinery and interest of capital, raising the cost to from 8s. to 10s. per acre. In both of these cases, the cost by horse-power would have been greater, and, as already described, the efficiency of the operation would have been considerably less.

We add one word more on Land Drainage, to which tillage is so closely related. And in place of rewriting an oft-told tale, we prefer to quote and condense our own remarks from a lately published work.*

If rain water has no escape through the soil, then it first stagnates in and on the land, and afterwards flows over it or dries off it. By stagnation, water hinders a variety of chemical processes within the soil, which are dependent on the presence there of air; by flowing over the surface of the land it carries

* The 'Farmer's Calendar.' Routledge.

away the finer particles of soil and of the manure laid on it; and by evaporating from its surface it cools the surface of the land. But it is on these three particulars—the warmth of the soil, the soluble ingredients of the manure, and the chemical action within the soil of air and of water holding it in solution—that fertility depends; and thus it is that land through which the rain-fall does not percolate is injured by it. If, on the other hand, the rain-fall is enabled thus to percolate, then (1) it carries downwards with it, and drags downwards after it the air, which is so necessary an agent within the soil in the preparation of the food of plants; and (2) instead of flowing over the soil, and carrying its fertilising ingredients to waste, its contents, taken from the air which it has traversed, are added to the warehouse of the soil, and a direct addition is thus made to the food of plants within it; and (3) instead of cooling the soil by evaporation, it carries, during spring time, the warmth of returning summer to the roots of plants, whose vitality and consequent energy of growth are thus excited. And besides all these particulars, in which the influence of moving water within the soil is contrasted with that of stagnant water there, you must remember that one great use of water in the land is to dissolve out the soluble ingredients of the soil, and carry them by the roots of plants, which may thus be fed; and no such use can be expected of it while it is stagnant. Its continual percolation through the land is therefore needed, not only as introducing chemicals which, as in a laboratory, prepare the food of plants—not only as introducing useful ingredients to the store-room of the food of plants—and not only as improving the underground climate on which early spring and rapid growth depend—but also as facilitating the movement of feeding matters within the soil, thus introducing activity into the feeding process; in other words, facilitating growth.

How, then, are you to induce this percolation downwards of the rain-water through the soil? Observe the process in those portions of your farm where it naturally obtains. It was thus that the late James Smith, of Deanston, came to adopt and advocate the so-called frequent-drain system. If, in addition to his copying nature by providing under the whole surface of the land a multitude of exit channels, so that, as towards fissures in the subjacent rock, the water should sink where it fell, and find its escape outwards through the subsoil, he had also imitated her in her best examples where fertility is seen on deep soils over a porous subsoil, and placed his exit channels at a depth which would have needed for their operation a passage of the rain-water through a greater

thickness of the soil than in the Deanston system was required, that system would then have never been disturbed. Mr. Smith's plans, however, were perfected only when to drainage was added subsoil ploughing. His theory was, that the rain dropped, where it fell, to the depth of the deep tillage, and then flowed along the subsoil to the drains; and these were trenches filled with broken stones nearly to the level of the subsoil ploughing. But this would be a very imperfect result of land drainage. The perfectly drained soil and perfectly cultivated farm does, indeed, more and more ignore the distinction of soil and subsoil.

Under perfect tillage, the object aimed at is to obtain a much greater depth of useful feeding-ground for plants than is provided by mere tillage implements. There are substances much below the reach of plough or cultivation on which plants feed, and for which their roots will go; and the subsoil (if so it must be called) will be more and more improved as a store-room of food for plants by any means which shall ensure the percolation of rain-water through it: and this can be effected only by deep drains. Even in the case of clayey soils there cannot be a question of the fact, that drains four feet deep are admirably efficient, wherever pains are taken to break up the soil by cultivation when it is dry. Let it be remembered that the sole operating cause in land drainage is the weight of the water, and there will then be less astonishment that the deeper drain should be more efficient than the shallow one. There is, in fact, in the former case, a greater weight of water pressing its way out of the exit-hole.

You would indeed do well to think of the mass of earth through which you can get rain-water to percolate, not as so many inches deep of soil, but as so many tons weight or cubic yards of material, which by cultivation and rain-water you have to fertilise, and from which, by rain-water and by living plants, you have to extract and convert the fertility you have conferred. No doubt the principal limit put to the depth of drains is the cost of this depth; for the greater depth of deeper drainage does not justify us in materially diminishing their frequency and so shortening their length per acre. But admitting the greater cost of the deeper drains, and supposing that drainage 2, and 3, and 4 feet deep will cost 3*l.*, and 4*l.*, and 5*l.* respectively per acre, yet we must remember that the mass of soil actually drained by these several operations, supposing the average depth so drained to be 18, 30, and 42 inches deep respectively, amounts to 65,000, 109,000, 152,000 cubic feet respectively per acre; and the mass of soil which is thus placed so as that rain shall percolate through

it, amounts to probably at least 3,000, 5,000, and 7,000 tons in the several cases; thus costing 1*l.* for about 1,000 tons of earth in the cheaper shallow drainage, and 1*l.* for 1400 tons of earth in the last case, which, though dearer per acre, is thus shown to be cheaper per the weight of earth laid open by it as the feeding ground of plants. Looking upon drainage, therefore, as the means of rendering fertile not so much a surface as a *mass* of soil, it is plain that the deeper and more costly drainage per acre may be the cheaper of the two.

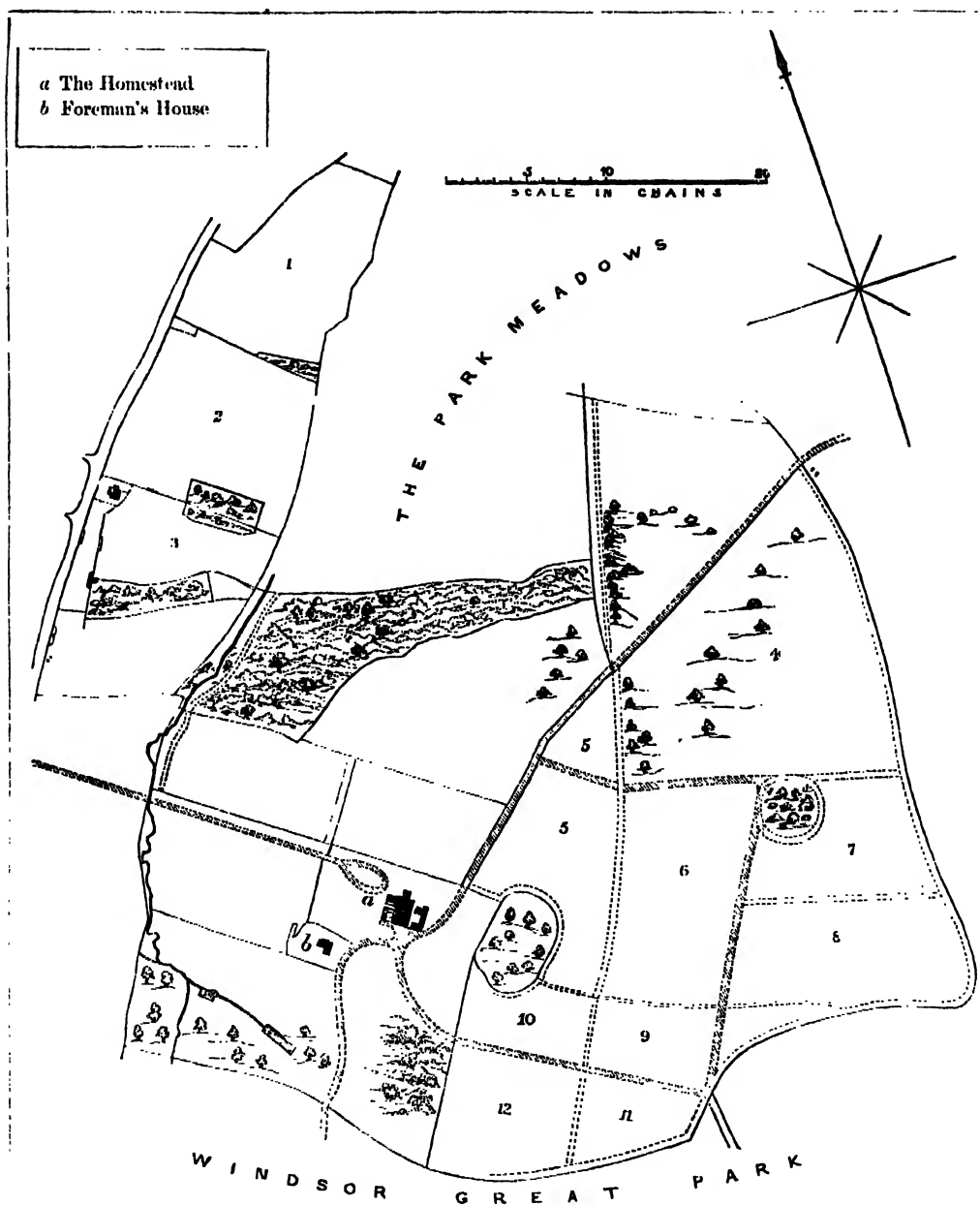
The whole subject of deep drainage and thorough tillage, to which reference has thus been made, has received admirable illustration in the fields of the Prince Consort's Flemish Farm; and we now return, therefore, to our work of description.

In the Map of this Farm on a following page the numbered fields are arable, and the others are pasture. The stone roads are represented by shaded lines, the green rides by dotted lines. Thus every field is in either way easily accessible.

The buildings are centrally placed. The cropping is this year (1862) as follows:—Nos. 1 and 5 Wheat, about 34 acres; No. 8 Beans, about 15 acres; Nos. 3, 4, 10, 11 and 12 Oats and Barley, about 80 acres; Nos. 2, 6, and 9 Turnips, Mangold Wurzel and Fallow, about 50 acres; No. 7 Clover, 11½ acres.

The rotation is a four-course, modified in both the ways which have been recommended; namely, by taking beans instead of clover over one half of the clover break, and by taking barley after a corn crop in place of after the roots or fallow. The whole arable land amounts to about 190 acres, and there

are rather more than 200 acres of pasture-land and wood-land, the whole occupation including nearly 400 acres. It is for the most part a very stiff soil, and has been greatly improved by its regular division into fields, its tile drainage four feet deep and seven yards apart, its admirable buildings, and its thorough tillage. Fowler's three-furrow steam plough, with a 12-horse engine, has been at work for the last two years. Mr. Brebner informs us that in the autumn of 1861 it ploughed 158 acres from eight to ten inches deep in thirty-nine and a half days, including all the time lost in stoppages and in removals from field to field. The wages paid during this time were 25*l.* 13*s.* 6*d.*, and the coals and oil consumed cost 20*l.* 7*s.* 6*d.* Breakages during this time cost 4*l.* 10*s.* The expense of ploughing this stiff clay land to so great a depth thus amounted in this instance to about 6*s.* per acre. If the tear and wear of the wire-rope and machinery, and the interest of capital were added, the cost per acre would amount in all probability to as much as 10*s.* or 11*s.* an acre. This, however, is much less than such work could be done for by horse-power, and the efficiency of the work is much greater. In the spring of 1862 the land lay dry and friable, needing only a working with the grubber across the former furrow to reduce the whole to tilth. The effect of the use of steam-power in cheapening the horse-labour of the farm has been considerable. Twelve or thirteen horses used to be employed on it, undertaking, however, of course, a good deal more than the mere labour of the farm.



PLAN OF THE PRINCE CONSORT'S FLEMISH FARM

Since the employment of Fowler's 12-horse engine the work has been easily done by eight.

One of the fields, No. 9 on the Map, was set apart, by Her Majesty's desire, during the Battersea Show of the English Agricultural Society, for the exhibition of the steam-plough, in order that foreigners and others might have an opportunity of seeing it at work within easy reach of London.



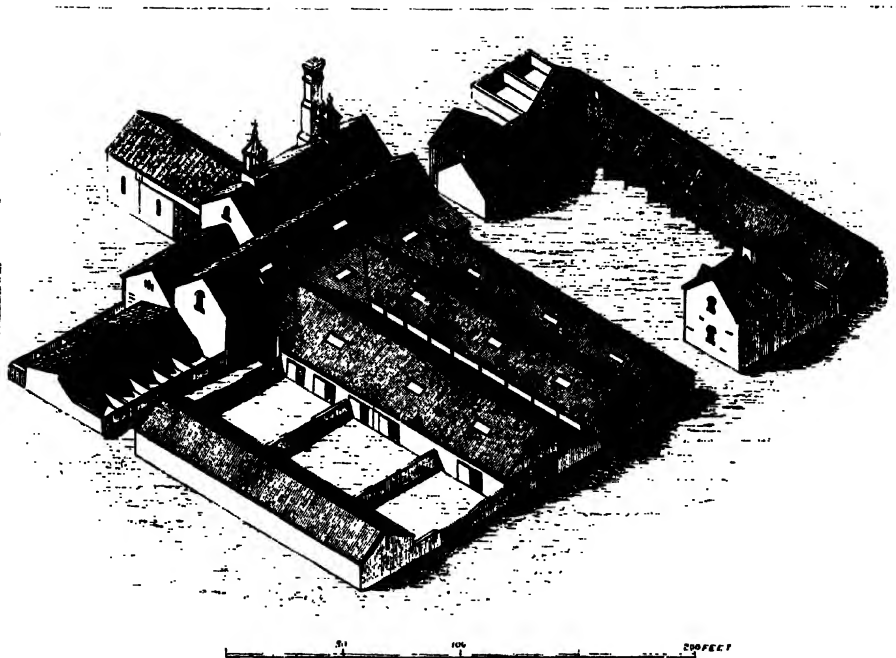
THE FLEMISH HOMESTEAD

The buildings on the Prince Consort's Flemish Farm, here represented, were designed and erected by Mr. J. R. Turnbull, of Windsor Castle, in conformity with very comprehensive and detailed suggestions and directions from His Royal Highness, in 1858. They are one of the most complete homesteads in the kingdom. The principle is one of the best for uniting compactness with easy arrangement of parts. A central covered yard has a stable

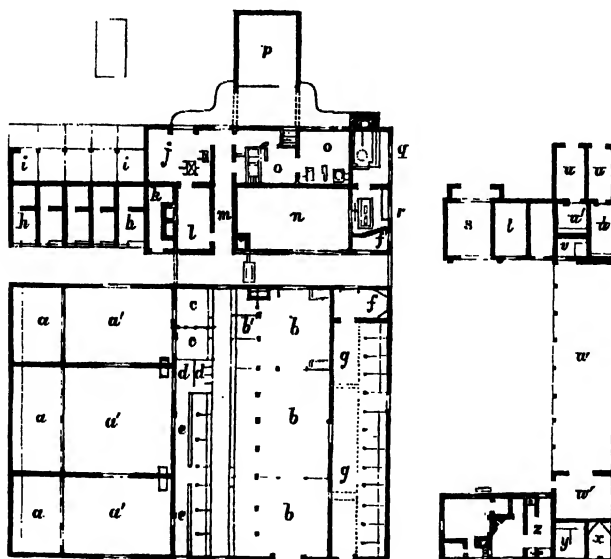
on one side of it and an open yard on the other. At the end of these, and separated by a covered cart-way, stand root-house and straw-house for the supply of the cattle and horses, with thrashing-barn and granary; and close by, detached from the main block of the building, near the stables, are the cart-shed, implement-shed, and cottages for the ploughmen. The drainage of the whole buildings is conducted to a tank at some little distance from the buildings, and there by hose and jet it is spread over the grass fields on a lower level.

The plan on the following page and the accompanying isometrical projection of these buildings, with the table of references, will enable the reader to understand their arrangement.

The connection of the various parts is most natural and obvious. The horses come out of the stable, and are at once close by the cart and implement-shed. They are yoked in carts, and carry the corn from the stack through the gangway between *p* and *o*, where the sheaves are unloaded and thrashed at *o*; the straw falls away into the straw-barn at *u*, and the grain goes upwards to the granary. From *u* the straw is carried the shortest possible distance to *a b c* and *g* and *h*. If the carriage of the litter should rule the position of the several feeding places, then this principle has been well observed in this instance. The soiled litter from the stable *g*, is thrust through openings near the floor into the covered yard *b*, and



HOMESTEAD AT THE PRINCE CONSORT'S FLEMISH FARM

(Designed and erected by J. R. Turnbull)

INDEX TO REFERENCE LETTERS.*

<i>a a'</i> Cow-yards open	<i>o</i> Thrashing-barn, containing Meal-mill, Out- and Bean-crusher, and Cake-mill
<i>b</i> Loose Boxes	<i>p</i> Sheaf-barn
<i>b b</i> Covered yards for young Stock	<i>q</i> Boiler-house
<i>c c</i> Feeding-boxes	<i>r</i> Engine
<i>d d</i> Calves' pens	<i>s</i> Shed for Portable Engine
<i>e e</i> Cow-stalls	<i>t</i> Fowls
<i>f</i> Saddlery	<i>u u'</i> Bulls' houses
<i>g g</i> Farmhorse stable	<i>v</i> Forge
<i>h</i> Piggeries	<i>w</i> Cart-shed
<i>i</i> Shed, with Liquid Manure Tank near it	<i>x</i> Implements
<i>j</i> Turnip-cutters	<i>x</i> Loose Box
<i>k</i> Pig-food and Cisterns	<i>y</i> Nag stable
<i>l</i> Cut chaff	<i>z</i> Cottage
<i>m</i> Passage	
<i>n</i> Straw-burn	

that from the cow-stalls *e*, into the open yard at *a'*. It thus gets trodden down into a solid material which suffers no waste while waiting its application to the field.

The machinery in the barns and houses is well arranged and well selected. Messrs. Clayton and Shuttleworth put up the whole of the machinery, consisting of one of their eight horse-power fixed steam engines, which works a thrashing, winnowing machine, and corn-mill, manufactured by them, a chaff-cutter made by Messrs. Cornes, a litter-cutter by Messrs. Ashby, an oat and bean crusher by Messrs. Turner, a cake-breaker by Messrs. Garrett, a root-cutter by Messrs. Gardner, and a pulping-machine by Messrs. Bentall.

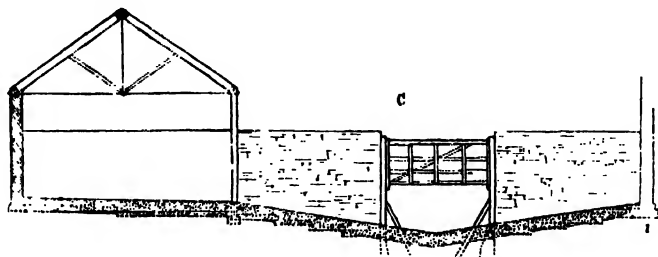
When the work of thrashing is going on, three men remove and build the straw, two men and two boys unload

* We are indebted for these drawings of the Prince Consort's Flemish Homestead to a forthcoming work by Mr. Bailey Denton, Jun., on the Homesteads of England.

the carts as they arrive, and feed the mill. By the corn-stack stands a big tripod used, when building the rick, for suspending the cradle taken from the cart wheels which together constitute the harvest cart. Pulleys are brought into use by which the inner cart frame on which the load is brought in from the fields is pulled by the horse up to a level with the rick and left there, while the one just unloaded is placed upon the empty wheels and taken back to the field for its load. In the shed outside are Fowler's steam-plough, Bentall's broad-share, Hancock's pulverizer plough, which met with more than its match on the stiff clay soil of the Flemish Farm; Phillips and Gardner's turnip-cutters, and Wood's mowing-machine.

A cottage containing several bed-rooms, a kitchen, and a sitting-room for the unmarried ploughmen is part of the farmery. Very comfortable accommodation is thus provided, and the establishment is in fact a model 'bothy.'

A great deal of instructive detail exists in the history and construction of these buildings. The spot chosen for their erection was fixed upon because of its central position. There was, however, a great deal of earth-work and excavation needed to adapt it; and it was distant both from bricks and gravel. In Mr. Turnbull's

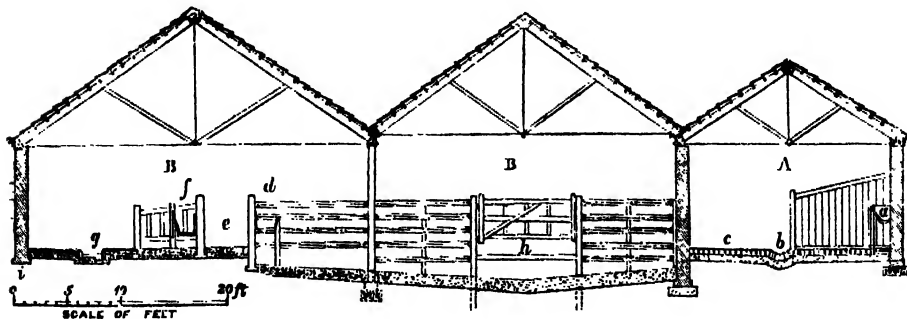


hands, however, both of these difficulties were obviated, by the expedient of making bricks and burning ballast upon the spot with the excavated material. The nature of the excavation may be gathered from the section of the buildings (below), in which it will be understood that the drawings on the two pages should have been continuous—the party wall *i* in both drawings being the same. The yards are covered with ballast and road-metal about a foot deep. The ballast is valuable as a corrective of the damp, which might otherwise have been expected from the clayey site of the buildings. The walls are in every case built on a concreted foundation.

The following are the references to the index letters on these drawings:—

A Stable — *a* Manger; *b* Gutter; *c* Floor of
Heath stone pitching over concrete
B B Covered yard divided by railing (*d*) and
gates, as seen here and in the plan, page
138 — *e* gangway between yard and cow-

stalls; *f* division of cow-stalls; *g* gutter
behind cows; *i* wall between covered and
open yard
C Open yard divided by wall and gates and
provided with open shed



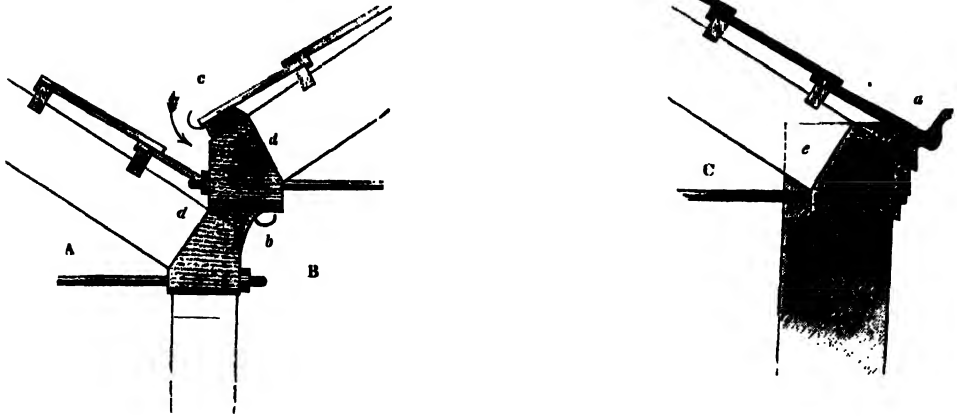
out low enough to hold a large thickness of lair. That of the cow-houses, chaff-house, and passages is asphalted in addition.

and thus a complete security is provided against the lodging of rats and mice. The flooring of the stable is paved with stone above the concrete.

In the roofing of these buildings Colthurst's three-ribbed tiles are employed, the last row being Beadon's patent caves tiles, which constitute a spouting for the roof water. The sections on the following page show the wall carrying the iron socket for the rafter, and the iron tie connecting it with a corresponding socket at the other end of the span. Beadon's tiles are bedded in cement and screwed to the rafter, and make a perfectly strong and efficient spouting. The roof is of exceedingly neat construction, with iron tie and ring bolt, and wooden struts. The principal rafters are 9 inches by 3 inches in section, and 8 feet apart. All other dimensions may be obtained from the scale given with the drawing in the previous page. The arrangement for providing ventilation to the covered yard is seen both in the section given there, and in the diagram on the left hand of the following page. It will be observed that the central roof is raised some 10 or 12 inches above those on either side --- the iron sockets receiving the rafters on either side of them at the two different levels, while between the two the open space provides for the passage of fresh air as shown by the arrow.

In further reference to these buildings it may be mentioned that wherever the walls in the plan (page 138) are represented in

shade lines, it will be understood that there is a second story. Thus over the thrashing-mill and boiler and engine-house there



SECTIONS OF EAVES

A Lower roof of covered yard
B Higher roof of covered yard
C Outer eaves of stable roof
a Beadon's patent eaves tile

b Gutter for roof of *A*
c Gutter for roof of *B*
d d Iron sockets for rafters of *A* and *B*
e Iron socket for rafter of *C*

are granaries; and in the cottage the second floor is arranged in sleeping rooms for the ploughmen. The walls are whitened with a silica wash which does not rub off, and is thus clean as well as clean-looking, which whitewash rarely is. The principal doors of the buildings are slung by friction wheels upon a horizontal iron rod resting on iron sockets built into the wall; and they slide to and fro without difficulty; thus easily shutting and opening gateways where collections of litter on the surface of the ground would interfere with the motion of a door upon hinges.

Water is laid on to the stables, and to troughs in the open and covered yards. The stable fittings, with rounded brick

coigns, substantial oaken posts, elm stall divisions, and wooden mangers, everywhere carry out the instructions of the Prince, *that the substantial and the useful, not the merely elegant and beautiful, should guide the construction.* The buildings cost, we understand, upwards of 6000*l.* of which not one sixth was provided by the landlord, H.M. Commissioners of Woods and Forests. The Prince entirely approved of these buildings, which combined, as he declared, usefulness with elegance of outline of arrangement and of material, in just the right proportion; so much so indeed, that His Royal Highness repeatedly recommended them to his friends abroad, and the plans were accordingly sent more than once both to Germany and Hungary for execution on estates there. The plan has also been erected in more than one instance in England.

As stated at pages 76–80, the main purpose of these buildings is the shelter of the live stock of the farm: and we have here live stock worthy of them. When, some years ago, it was resolved that at the Prince Consort's farms there should be cultivated herds of our three principal breeds of cattle, His Royal Highness instructed Major-General the Hon. A. N. Hood to purchase the foundation of future herds of Herefords and Devons for the farms in his charge. And now, after six or eight years' care, the herd of Herefords at the Flemish Farm is one of the best in the kingdom. Four cows, *Young Damsel*, *Hedgehog*, *Topknot*, and *Vienna*, were bought at the Earl of Radnor's sale in 1855. BRECON, a bull bred by Mr. Walter

Mayberry, was purchased for 120*l.*, in March 1856. At Viscount Hereford's sale in the same month, *Cherry, Fanciful, Damsel, Rose, Plum, Huntington, Morello, Heather-bell*, cows and yearling heifers, were purchased at high prices. In the following month *Guenllian* and *Zoe*, three-year old cows, were bought of Mr. W. Mayberry. In August of the same year *Superb*, a two-year old heifer, which had just taken the first prize at the Salisbury Show of the Royal Agricultural Society, was purchased of the Earl of Radnor. She is by CARLISLE (923), who was first in his class at the Carlisle Meeting of the Royal Agricultural Society and at the Cardiff Meeting of the Bath and West of England Agricultural Society. There is a heifer, *Maud*, by WINDSOR (1456), from her in the herd, and also the bull MAXIMUS (1650), by BRECON. MAXIMUS won the first prize at the Warwick Meeting of the Royal Agricultural Society, and again in his class at the Battersea Meeting, and many of the younger members of the herd are by him. Since MAXIMUS, *Superb* has regularly bred bull-calves which have been fattened. She was herself bred by the Earl of Radnor, and was the only Hereford remaining unsold at the sale when his Lordship gave up Hereford breeding. In 1858, *Lupa, Ceres, Proserpine*, and *Juno* were purchased at Lord Berwick's sale; and at the sale last year of the same herd after the death of that nobleman, *Eva, Alberta* and *Adela*, yearling heifers, were purchased for prices between fifty and sixty guineas each; and GARIBALDI (2007), a bull-calf, was purchased for sixty-six guineas.

Hereford breeders will know, from this catalogue of the principal animals in the herd, the particular strains and families of the breed which are represented in it. Of the older cows, *Young Damsel*, *Topknot* and *Damsel* have no descendants in the herd.

GARIBALDI, bought at Lord Berwick's sale, is by SEVERN (1382), which took the third prize at the Warwick Meeting of the Royal Agricultural Society, and with cow and offspring took the first prize at Hereford in the same year. GARIBALDI's grandsire, WALFORD (871), was first in his class at the Windsor Meeting in 1851, and the best of any age or breed at the International Show at Paris, in 1855: he also won the Sweepstakes, open to all England, in 1850, at Ludlow. There is thus ample testimony, in the public awards of prizes, to the merit of the stock from which this herd is descended.

The other purchases at Lord Berwick's sale are of equally good descent. *Eva*, *Alberta*, and *Adela* were all of the so-called *Silver* tribe. *Eva* and *Adela* being granddaughters, and *Alberta* a daughter, of a cow purchased in the market from a grazier, by the late Lord Berwick. Although at the time much was said by the dealer from whom they were purchased, his Lordship took but little heed of his information, which he afterwards regretted. From the general character of this cow *Silver*, he resolved to breed from her. So little, however, did he at first think of her, that her first calf was made a steer of, and it was not

until after the celebrated cow *Carlisle*, now the property of Mr. Duckham, editor of the 'Hereford Herd Book,' had begun to develop her many beautiful points, that his Lordship rightly valued *Silver*. *Carlisle* was a winner of first prizes at the Carlisle, Chelmsford, and Salisbury Meetings of the Royal Agricultural Society. From her first calf, *Silver* continued regularly to breed heifers, until a few weeks after the death of her former owner. *Carlisle* was by ALBERT EDWARD (859), and it is rather unaccountable, that after the great success of her produce by this bull, although ALBERT EDWARD continued in the herd, he was never used again, all her subsequent produce being by ATTINGHAM (911), until the bull-calf of last year, which was by SEVERN (1382). Of *Silver's* produce after *Carlisle*, *Beauty*, her next calf, won second prizes at Salisbury and Warwick, and, with SEVERN and their offspring, was first at Hereford. Those whose duty it was to judge her at Leeds considered her too pampered an animal to be shown as a breeding cow, and therefore passed her. Next followed *Ada*, dam of *Era*, also winner of a second prize of the Royal Agricultural Society. She was placed third in her class at the Battersea Show. Then came *Agnes*, another winner of a second prize at the Royal Agricultural Society's Show, and of a high commendation at the Leeds Show, where her daughter *Adela*, now of the Royal herd, was the admiration of the yard. *Adela* received the first prize in her class at Battersea; and so did her sister *Adelina*.

Of the bulls named in this account of *Silver*, three of whose offspring are in the herd at the Prince Consort's Flemish Farm, we add that ALBERT EDWARD was placed first in his class at the Lewes and Gloucester Meetings of the Royal Agricultural Society, and that *Ceres*, *Proserpine*, and *Juno* in the herd, are by him. ATTINGHAM was first at the Carlisle Meeting. SEVERN has been already named as third at Warwick, and, with cow and offspring, first at Hereford in the same year.

There does not seem to be any need of pursuing the description of the herd in greater detail. Enough has been said to inform anyone of the descent of the various animals of which the herd is composed. Of the cows and heifers now in the herd one is by JEFFRIES (587); three are by VENISON THE SECOND (1442); one is by DEWSHALL (358); five are by PHANTOM (1035); two are by VANGUARD (1109); two are by YOUNG DEWSHALL (1125); one is by CARLISLE (923); two are by ATTINGHAM (911); three are by ALBERT EDWARD (859); one by WILL O' THE WISP (1454); and one by SEVERN (1382). Besides these there are a number of young stock by WINDSOR (1456), and MAXIMS (1650), bred on the farm, whose pedigree has been already given.*

Besides the exhibition during the last few years of breeding stock from this herd, the Prince Consort had long been a

* The numbers are those of Eyton's *Herd Book*, to the editor of which, Mr. T. Duckham, of Baysham Court, Ross, we are indebted for many of the above particulars.

successful exhibitor of fat stock of Herefords. Latterly his herd has been maintained chiefly from its own members, and will compare with any in the country for the purity of its descent and the quality and uniformity of its character.

We have only to add of the Prince Consort's Flemish Farm, that, unsuited as its soil is to sheep-farming, the only remaining stock upon it which has not been named, is that of Berkshire pigs, descended from stock of Mr. Pain, of Laverstoke, and Sir F. Goodricke, Bart., the Rev. Mr. James, of Devonshire, and Messrs. Hewer and Sadler.

It is, however, especially as exemplifying the influence of drainage and tillage on a stiff clay soil, that the Prince Consort's Flemish Farm, under the management of Major-General the Hon. A. Nelson Hood, is a useful agricultural example. On a naturally poor clay soil, inferior pasture land broken up has by these means yielded 36 to 40 bushels per acre of wheat, 60 to 80 bushels of oats, large crops of mangold wurzel, clover, and beans. It may well be visited as an example of good cultivation under originally untoward circumstances — as furnished with one of the best sets of farm buildings in the country — as supplying a useful contribution to a still limited experience of steam cultivation — and as stocked with a capital herd of well-bred Herefords.

We now proceed once more across the Park to the Prince Consort's Norfolk Farm.

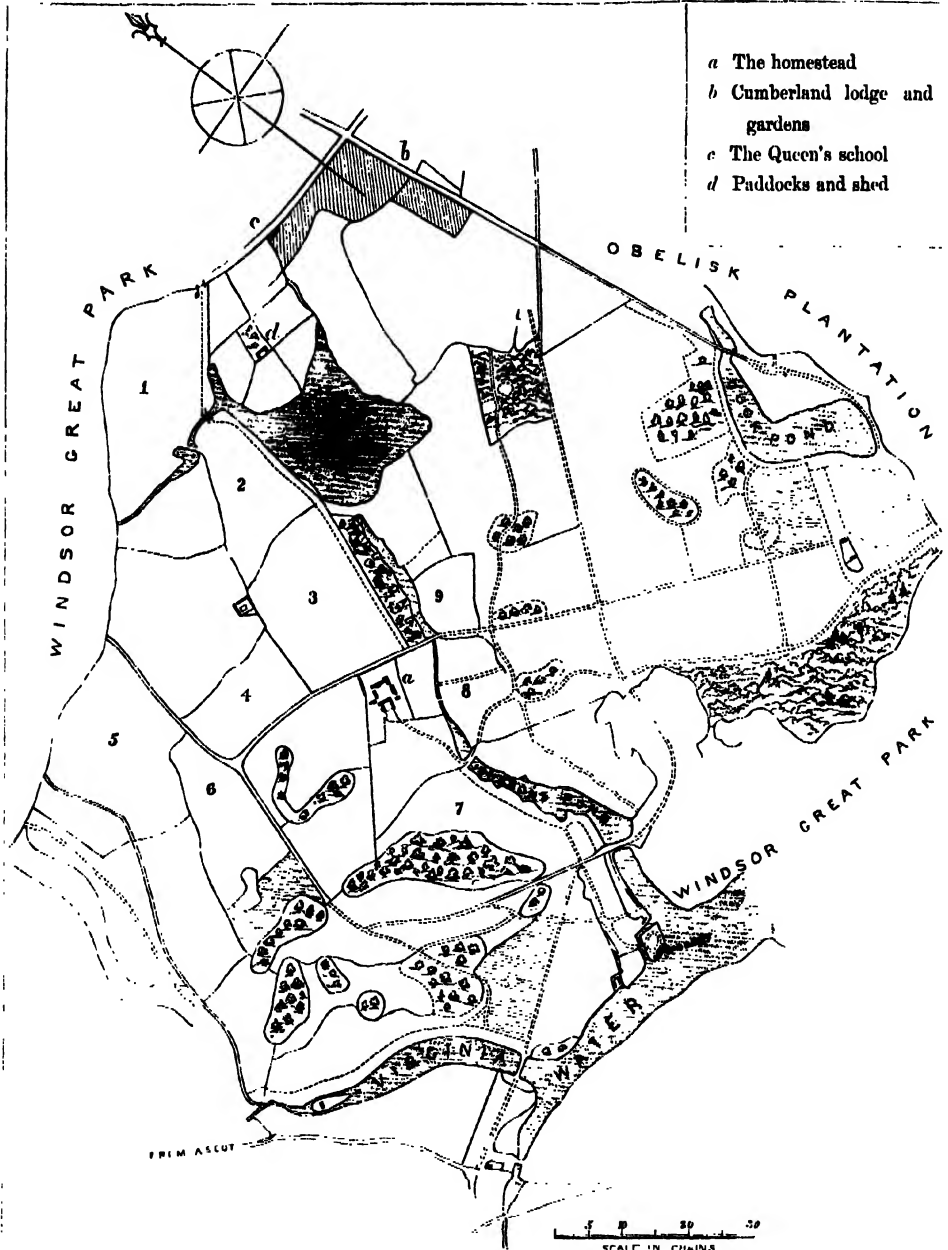


SKETCH OF THE PRINCE CONSORT'S NORFOLK HOMESTEAD

3. THE PRINCE CONSORT'S NORFOLK FARM.

The above sketch represents the cattle-yards and buildings of the Prince Consort's Norfolk Homestead, as seen from the grass-field to the south-west of them. They are situated about two miles from the Flemish Homestead, across the Great Park and at the farther end of it. Including a large extent of poor, open, and almost unenclosed pasture land on its eastern side, the Prince Consort's Norfolk Farm is a tract of about 700 acres, 200 of which, or thereabouts, are arable. The soil is much lighter than that of the farm just described: a great deal of it is a light sand, and while a good deal is a stiffish

loam adapted for wheat and beans, it is all capable of turnip cultivation. It is thus adapted to the Norfolk system of man-



MAP OF THE PRINCE CONSORT'S NORFOLK FARM

agement, which was adopted here when George III. was the tenant of the farm; since that time a large quantity of the lighter land on the eastern side of the farm, which was cultivated on that plan, has been laid down in permanent grass. The four-course rotation, with occasional 'stolen' crops, as of trifolium, vetches, rape, &c., is still adopted on the heavier portion of the arable land which remains. Probably one-fifth of the land may be in clover and beans. Mangold wurzels and swedes form one of the regular 'breaks' in the rotation; one-half in general being carried off the land and the remainder fed on it with sheep wherever the land will admit of it. Chandler's liquid manure drill is used in putting in both swedes and mangolds on the lighter soils of this farm with good effect. A considerable quantity of artificial manure, guano and superphosphate is thus applied; from 300*l.* to 400*l.* worth in all per annum is used on corn and green crops. The cultivation has hitherto been done with twelve or thirteen horses; but, like the Flemish Farm, it can be cultivated with about eight now that it shares in the work of the steam-plough.

The compact form of the farm, the central position of the buildings, the arrangement of the fields, and their accessibility by roads, are all well shown in the Map on the previous page. The arable fields are numbered, and the following has been the cropping of the land this year:—No. 1, Oats 38 acres; No. 5, Beans 20, and Clover 15 acres; No. 2, Mangold

Wurzel 39 acres ; No. 3, Turnips $32\frac{1}{2}$ acres ; Nos. 7, 8, and 9, Wheat $57\frac{1}{2}$ acres ; No. 11, Winter Barley 19 acres.

From this list of crops it will be seen that counting the bean crop along with the clover, the place of which it occasionally takes, about one-half of the land is in green crops and the other half in grain. The large proportion of turnips and mangold wurzels is needed for the maintenance of a flock of some 400 Hampshire sheep, which, with the help of the Flemish Farm, are kept here, as well as of a herd of nearly 100 pure bred Devon cattle of all ages.

The Devon herd is the principal feature of the farm. It has arisen since 1856, when, contemporaneously with the commencement of the Hereford herd at the other farm, the Prince Consort, through Major-General Hood, purchased the nucleus of his future stock. Mr. Brebner, who had been sixteen years in the service of His Royal Highness, and has for the last nine of them had the immediate direction of some 1600*l.* worth of labour annually on the Flemish and Norfolk Farms, in 1856 bought of Mr. George Turner, of Barton, near Exeter, ZOUAVE (556), a one-and-a-half-year old bull. Both he and his offspring in the herd are illustrations of the safety, and indeed the advantage, of close breeding—the relationship of parents being disregarded so long as both possess the qualities desired in their offspring. Thus both the dam and sire of ZOUAVE were by a common sire, Mr. Quartly's EARL OF EXETER

(38) ; and the son of ZOUAVE, COLONEL (387), has been put more than once, with advantage, to heifers of the same parentage with himself. ZOUAVE won the Royal Agricultural Society's first prizes in his class at Carlisle and Chelmsford, and their second prize at Chester. His son, COLONEL, bred by the Prince Consort, dam *Rosa*, bred by Lord Aylesford, and bought of Mr. Turner, won the first prize in his class at the Barnstaple Meeting of the Bath and West of England Society, the Royal Agricultural Society's second prize at the Chester and Warwick Meetings, and their third prize at Leeds, and he was highly commended at the Battersea Meeting. Another bull now employed in the herd is CROWN PRINCE, by NAPOLEON (259), bred by the Prince Consort from *Peace-and-Plenty*. His dam, now in the herd, was bought, a seven-year old cow, two years ago of Mr. J. Quartly. She also is by Mr. Quartly's EARL OF EXETER (38). CROWN PRINCE won the first prize in his class at the Leeds show of the Royal Agricultural Society, and again the first prize at Battersea. He is descended from *Curly*, which Mr. F. Quartly believed to be one of the best cows he ever bred.*

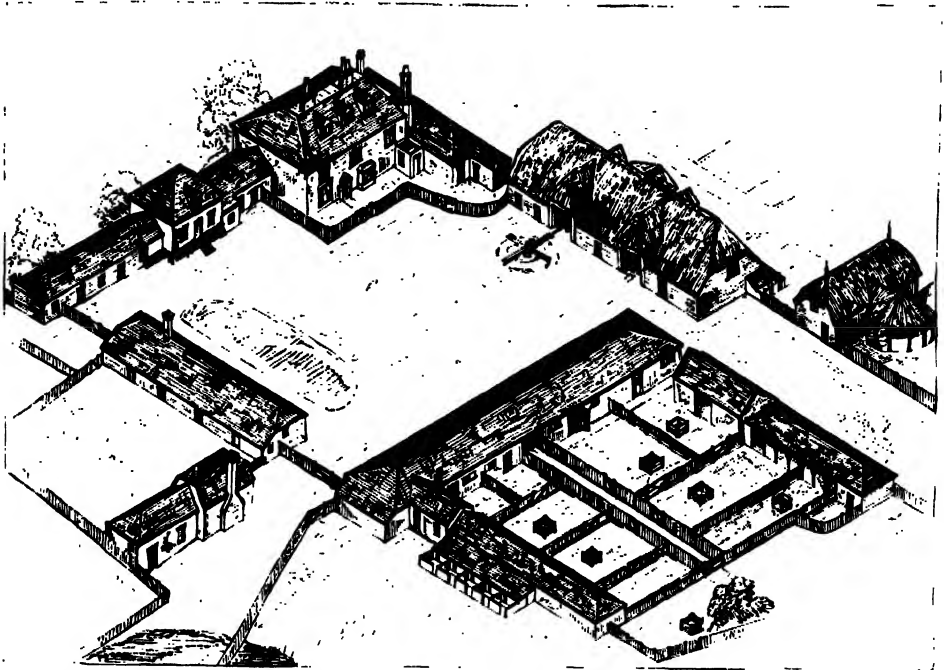
The purchase of cows and heifers commenced in 1856 with *Fancy*, bought of Mr. W. Farthing, of Stowey Court, Bridgewater: her first calf, *Ilex*, won the first prize at Leeds last year, and after appearing at the Birmingham fat show was sold for 55*l*. *Fancy* has continued to breed regularly, and her

* We have to thank Captain Tanner Davy, interesting and instructive particulars in the the editor of the *Devon Herd Book*, for several history of the Prince Consort's Devon herd.

last calf, PRINCE ALFRED, by COLONEL (357), was shown at Battersea, and won the first prize in the class of bull-calves.

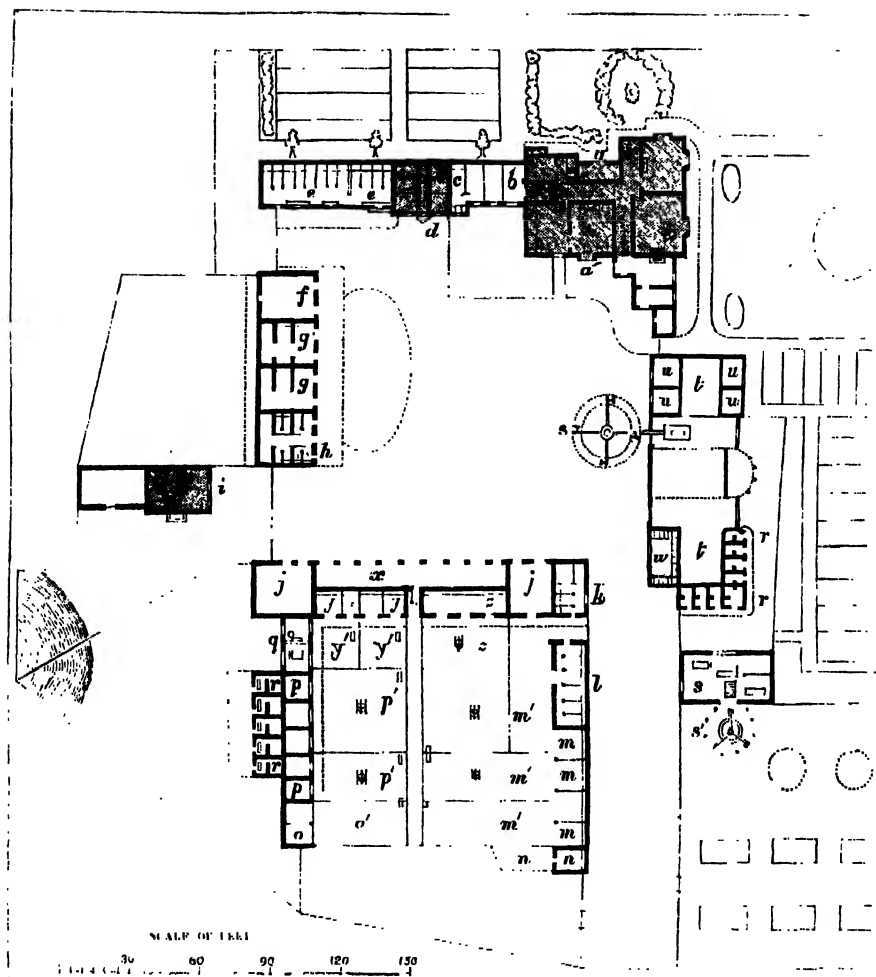
It is plain from the distinctions thus achieved by this herd, though so lately established, that it includes animals of the very highest excellence and breeding. Others, however, may still be added to the list. Thus *Verbena*, bred by Mr. Turner, and bought in 1856, won the Royal Agricultural Society's first prize in her class at Lewes and Gloucester. PRINCE ARTHUR (492), son of *Spot*, another cow bought from Mr. Turner, won the second prize at Salisbury, and was commended at Chester. *Lily*, bought of Mr. Webber, of Halberton, won the first prize of the Bath and West of England Society at Tiverton, and their second prize at Taunton. *Garcia*, bred by Mr. Halse, of Molland, won the Royal Agricultural Society's first prize at Lincoln. And besides these, others could be named as having bred prize winners at the fat stock shows. In addition to a large number bred on the premises, the herd now includes twenty-three cows and heifers bought of Mr. Turner; five purchased from Mr. R. Mogridge, and five from Mr. T. B. Morse; three from Mr. J. Quartly; two from Lord Portman, and two from Mr. T. Webber; and single animals from Messrs. Ellis, Miller, W. Farthing, J. Merson, and Rev. W. Marriott. The herd, however, ought rather to be traced to the breeders of the animals, than to those from whom they were originally purchased. But it must suffice to say, that all the best names in the history of the Devon breed are represented in this herd.

It is from the stock of Messrs. Quartly, Halse, Farthing, Turner, and Mogridge, that the best things in the Prince Consort's Devon herd have descended. It is simply a breeding stock; there is no dairy; the calves remain with the cows all the summer, and the accommodation for them, in pastures, paddocks with sheds, and the old-fashioned buildings of the farm, is very good.



ISOMETRICAL PROJECTION OF THE PRINCE CONSORT'S NORFOLK HOMESTEAD

The drawings represent the arrangement and construction of the several parts of the Homestead. They are of the old-fashioned kind, wooden and thatched; barn, stables, and sheds, being arranged around a large quadrangle, of which Mr. Brebner's comfortable residence and its offices occupy one side, while below and on the sunny side lie other sheds and yards for stock.



PLAN OF THE PRINCE CONSORT'S NORFOLK HOMESTEAD

REFERENCES TO INDEX LETTERS ON PLAN

- | | | | |
|-------------|---------------------------------------|-------------|---|
| <i>a b</i> | Farm-house and offices | <i>u u'</i> | Sick-bay |
| <i>c</i> | Nag-stall | <i>o d</i> | Cow-shed and yard |
| <i>d</i> | Granary | <i>p p'</i> | Bull-houses and yards |
| <i>e</i> | Farm-horse stable | <i>q</i> | Turnip-store and cutter, boiling-house, &c. |
| <i>f</i> | Shepherd's house | <i>r r</i> | Pig-sties |
| <i>g h</i> | Boxes and stalls for cattle | <i>s s'</i> | Mill-house, with chaff-cutter, &c. |
| <i>i</i> | Carter's cottage and carpenter's shop | <i>t</i> | Barn and threshing-machine |
| <i>j j</i> | Cart-shed and implements | <i>u w</i> | Poultry-houses |
| <i>k l</i> | Fattening-sheds | <i>u u'</i> | Tool-house and α cart-shed |
| <i>m m'</i> | Cow-sheds and yards | <i>y z</i> | Cow-houses and yards |

The Homestead has the merit, which old thatched buildings often have, of comfortable lair and housing for the live-stock. It has also the questionable merit of picturesqueness, which is often the result of a rambling arrangement, not to speak of dilapidation and decay. Here, however, everything is kept in good and trim repair; and the picturesqueness is the result of position on sloping ground among trees, of high thatched roofs and gable-ends, rather than of the lack of any plan of arrangement. The plan, however, on which they have been built is not a good one; and it will at once be seen from our drawings how much labour is lost in the conveyance of food and litter to the cattle, when the process, as it must be conducted here, is compared with the process as carried out at the Prince Consort's Flemish Farm. The buildings date from the reign of George III., who was for many years tenant of this farm. His Majesty's bailiff, Mr. Hatch, ultimately occupied the farm upon his own account. George IV. again took it into royal occupation, Mr. Ingall being His Majesty's bailiff under Sir Samuel Hawkes. He was succeeded by Mr. Kendall as manager under William IV. Messrs. Kendall and Day and Godwin followed as farm managers under General Wemyss, who superintended the Royal farms for Her present Majesty. After the death of General Wemyss, Mr. Brebner* came here

* We have to thank Mr. Lewis and Mr. Fischer, agricultural pupils of Mr. Brebner, for their friendly assistance in preparing a plan of the Norfolk Homestead, and drawing up registers enabling a description of the Prince Consort's herds.

from Bagshot, and the farm was then placed under the superintendence of Major-General the Hon. A. Nelson Hood.

This is the history of the changes in the tenancy of the land during the past half century. It is interesting chiefly as showing that the land has nearly always been in the occupation of the Crown. The tenancy is free—rent being chargeable on only a portion of the Prince Consort's Flemish Farm. Rates and taxes amounting to nearly 200*l.* a year are paid on both.

Mr. Brebner came to the stewardship of these farms from much poorer land. The Bagshot farms are for the most part on a poor and hungry soil. They and the Prince Consort's Norfolk, Shaw, and Flemish Farms make a complete series of increasingly stiff soils, on which the varying importance of manures and tillage and land-drainage receives the completest illustration, including as it does instances in which the land is a mere machine, into which manure must be put before the crops made of it can be grown—just as rags must be fed into the mill before the paper can be forthcoming from it: including instances also in which the soil is already full of the raw material of plants—a strong-box, in fact, full of the raw material of the manufactured crop, which only needs, by tillage and land drainage, to have the stores already there made available, in order to the creation of fertility: and including instances between these two extremes, in which, by both tillage and manuring, and a judicious rotation of

crops, the soil may be economically employed as in part a naturally provided apparatus for the production of crops.

We have already pointed out the relations of land drainage and deep and thorough tillage to good agriculture, as illustrated in the former occupations of this series; we have now to point out, as they are illustrated on the Norfolk Farm and elsewhere, the offices performed by manure and rotations of cropping, in the maintenance of fertility.

The following remarks, accordingly, on crop rotations and manures, have been drawn up, like the short essays on farm buildings and on tillage and land drainage, interpolated at pages 76 and 125, as a general exposition of that branch of farm practice which each farm in its turn most strikingly illustrates. The Prince Consort's Norfolk Farm is not a special illustration of the excellence of farm buildings such as the Home and Shaw Farms exhibit; nor are the advantages of drainage and steam tillage so well illustrated on it as they are on the stiff clay soils of the Prince Consort's Flemish Farm. It is one of the more ordinary class of farms, on which the farm-yard manure, somewhat expensively and wastefully made in an imperfect homestead, has to be supplemented by the purchase of artificial manures, and in which the natural resources of the soil have to be husbanded and helped by adopting a rotation of crops which shall draw upon them as lightly as may be. The following short essay on an

important part of farm management, which is especially illustrated on the Norfolk Farm, is therefore properly inserted here; but the reader may pass it over, if he chooses, resuming the thread of the story at page 166:—

CROP ROTATIONS AND MANURING.

These two subjects are related just as a manufacture is related to the supply of its raw material. We take our crops one after another, in the order in which they shall the most economically draw upon those stores of food for them which are either naturally present or artificially supplied in the soil, *i.e.* in the order in which each is the most likely to prepare the land for the others by taking from it less or adding to it more of what the succeeding crop requires. Till twenty or thirty years ago, the proper succession of crops was thought the most important part of farm practice; for then each crop was grown simply upon the natural supply of the mineral food which tillage had prepared for it within the soil, and upon the ordinary supply of organic food which in the *débris* of the previous crop had been added to the land. And accordingly, landowners, when fencing about the cultivation of their estates with conditions on which the maintenance of the value of those estates was believed to depend, made the rotation of crops which was to be followed the principal condition of them all. And the main feature insisted upon was the adoption of the alternate system of husbandry, as it was called, in which exhausting grain crops were alternated with manure-producing green crops. The primitive rotation to which tenants were then restricted was the Norfolk or four-course system, of whose natural tendency to maintain fertility Professor Johnston speaks thus, in his ‘Lectures on Agricultural Chemistry:’—

‘If, after a skilful manuring, turnips grow luxuriantly, it is because the soil has been enriched with all that that crop requires. If a healthy barley crop follow the turnips, it is because the soil still contains all the food of this new plant. If clover thrive after this, it is because it requires certain kinds of nourishment which neither of the former crops has exhausted. If, again, luxuriant wheat succeeds, it is because the soil abounds still in all that the wheat crop needs—the failing vegetable and other matters of the surface being increased and renewed by the decaying roots of the preceding crop of clover.

And if now turnips refuse to give again a fair return, it is because you have not added to the soil a fresh supply of that manure without which they cannot thrive. Add the manure and the same rotation of crops may again ensue.'

The four crops named would not succeed so well in any other order, because the exhaustion of the soil by each would then have more rapidly unfitted it for the production of the others. The reasons for a rotation of crops may be more largely stated thus—and we shall again condense and quote our own remarks from a recent publication, 'The Farmers' Calendar:—

If clay land be best for wheat and beans, and moist sandy land be best for oats, and gravelly soil for barley, and if turnip soils are for the most part a tolerably distinct class, why not devote land permanently to the growth of the crop for which it is thus the best adapted—growing wheat and beans permanently on stiff soils, barley and turnips on light soils, and so on? Whence the need of taking these crops one after another? The following is an answer:—

In the first place, every farmer must grow a number of crops whether he has a variety of soils upon his farm or not, because the relation in which he stands to his labourers requires that a pretty even quantity of employment be provided all the year through. If one or two crops only be cultivated, this will not be the case—the labour will be accumulated at one or two parts of the year, and so men will either be idle during long intervals, or they will at any rate be unable to find constant employment on the same farm, which it is for the interest of all parties they should.

Then, again, not only must we grow a number of crops on account of our labourers, but we must grow a number on each farm because of our live-stock—not only are employment and wages wanted every month in the year, but food for cattle is wanted every month in the year, and for this reason, therefore, as a general rule, a variety of crops is needed on the farm.

But why must these crops be taken after one another? To this question there are several answers. Thus, first, any one plant when grown successively and repeatedly on the same plot of ground does under ordinary circumstances and according to ordinary experience degenerate and dwindle. The wheat plant will, if it come to a ripe maturity at all, do so in a stunted form; but it will probably, more or less, die before it arrives at maturity. The turnip will, even

if taken so seldom as once in every four years, in the course of time no longer bear so quick a succession, it will acquire a diseased and stunted and forked growth. The clover plant is another illustration of the same truth—the so-called clover sickness being consequent upon the frequent recurrence of the clover crop upon the same ground. The improvement of grass lands with their age, though an apparent, is not a real exception to the rule of these instances. Different species and even different classes of plants grow *together* on the same land there; and so one of the conditions provided by a rotation of crops, viz. the demand upon the soil being varied by the cultivation of a variety of crops, is secured.

But besides plants degenerating as a general rule if taken repeatedly from the same ground, it is found that crops succeed better when taken in a certain order after one another. Thus wheat grows better after beans than after oats or barley, and a succession in which grain crops and green crops alternate is found in general practice more productive than one in which grain crops follow one another. This experience of the productiveness of the crops we cultivate is one of the reasons for a *rotation* in the place of a *succession* of crops. The explanation of this experience is a point on which the attention of scientific men has been more bestowed, probably, than on any other point in the whole range of farm practice. There are three principal theories founded more or less fairly on observed facts, by which the need of a rotation of crops is explained.

(1) There is the theory founded on the fact that plants during growth excrete certain juices from their roots which are thus returned to the soil. De Candolle entertained the idea that a crop might render the land on which it grew unsuitable to itself by overloading it with this excreted matter, and that though the soil was thus rendered unsuitable for the crop in question, yet it might not be unfitted for the growth of another. The excrementitious matter of one plant might indeed be real nutriment to another; and thus was explained not only how wheat after wheat would not prosper, but also how wheat succeeded better after beans than after some other crop, as oats or barley, or even turnips or potatoes. This theory, though consistent with the actual experience of the farmer, has fallen into disrepute. It is now believed that organic juices excreted cannot remain unaltered through months of exposure in a soil to be in force when the young plant again comes to be drawing its nourishment from the soil in question.

(2) There is the theory of exhaustion. It is known that the mineral part of a plant does not correspond in composition with that of the mineral matter

in solution within a soil, and by repeating the plant therefore on the same land it is obvious that certain ingredients in the soil will be exhausted sooner than others — faster, indeed, than the natural process of disintegration will supply them from the more permanent part of the soil. Wheat taken repeatedly from the land, straw and all, will rob it rapidly of its soluble silica; turnips will rob it rapidly of its potash. But if these crops be taken in succession the soil will have a longer time in which to accumulate and present for use the necessary ingredients when the crop requiring them as food shall come round again. This second theory does receive some countenance from the researches of the chemist into the composition of plants. And if the composition of our ordinary crops per acre does not fully tally with it (the turnip and mangold crop, which are restorative crops in practice, taking in reality more out of the land than a wheat crop or a barley crop, which are in practice the especially exhaustive crops), yet it must be remembered that these green crops are not sold off the land in ordinary farm practice, and that the straw of our corn crops and the hay of our grass crops are also returned to the land through the animals fed upon them.

(3) Nevertheless, the theory now most generally held is a different one yet. In the first, the soil is supposed to require a succession of crops because each poisons the ground for itself; in the second, because each exhausts the ground for itself; and in the third, because in the system under which green crops alternate with grain crops, the former by their consumption on the land accumulate there the fertilising matters which in their growth they have absorbed from the air. This is the theory to which the Rothamsted researches have led Mr. Lawes. It renders the theory of exhaustion perfectly consistent with the facts of every farmer's experience.

Apart from scientific explanation of the fact, it may be alleged that the power of a rotation to maintain the fertility of the soil depends practically on the quantity of meat which can be made during it per acre by the consumption of its green crops. This is owing to two circumstances — first, the very obvious one that the quantity of manure made upon the farm depends on the quantity of live-stock fed upon it: and secondly, the fact, that the plants on which our sheep and cattle are fed, leafy and succulent in their growth, draw their nourishment from the air as much as from the soil, so that the manure derived from their consumption not only supplies to the surface soil on which we place it most of the mineral matters drawn upwards from both soil and subsoil by the crop, but it adds fertilising matters drawn downwards from the air, which are thus

a clear addition to the fertility of the land. How very materially rotations vary in their power thus of either using or 'replenishing the fertility of the land, may be judged from the cropping of the Prince Consort's Shaw, Flemish, and Norfolk Farms respectively. Of every 100 acres on each of these three farms, 70, 68, and 61 respectively are in grain sold off the land; 30, 32, and 39 respectively being in green crops consumed upon the land. Or if the bean be reckoned among the restorative crops, it may be said that these occupy 40 per cent. of the clay soil farms, and 50 per cent. of the light soil farms.

An ordinarily managed clayey soil, richer naturally, can be made by tillage to yield continuously a larger proportion of grain produce; while for the lighter soils we not only need a larger proportion of manure-producing crops, but we have to enrich the manure thus provided by a large consumption of purchased cattle-food, and to add to it by a large consumption of purchased fertilisers. And this is where crop rotations and artificial manuring have a common bearing. By the one we endeavour to economise the natural supplies of fertilising matter; by the other we add artificially to their quantity. And it is by our discoveries of guano, and of the nitres, and of their agricultural value, and by the enormous extension lately of the manure manufacture, that the latter process has so far displaced the other, that now it is generally understood a liberal cultivator, with ample stores in the manure market at his command, may grow what crop he pleases, in the order most convenient to himself, without any necessary damage to the natural fertility of the land. How entirely different, indeed, farm practice has become of late years by the use of guano and of manufactured fertilisers, every energetic cultivator knows; and no one more than the tenant of the Prince Consort's Norfolk Farm, if his practice could be compared with that of half a century ago. The object is now rather to feed the crop than to fertilise the land. The dependence is not upon the general effect of a good rotation, but on a treatment of each crop in accordance with its known requirements.

In the 'Agricultural Gazette' of March 24 and 31 of 1862, there is described by tabulated figures the actual practice of manuring on 2,292 acres of light pasture land, and 11,760 acres of light arable land; on 4,305 acres of heavy pasture land, and 4,523 acres of heavy arable land; on 8,384 acres of medium pasture land, and 23,357 acres of medium and various arable land;—or in all on about 55,000 acres of arable and pasture land on 129 farms in the principal counties of England and Scotland. There are also reports from nearly all these farms of the ordinary

management of this department of agriculture in the neighbourhoods from which they are sent: and the quantity of artificial manure which is shown by these returns to be used on the lands of every energetic cultivator, is astonishing; showing, as the Prince Consort's farms have already done, that English agriculture is now a systematic, energetic, scientific manufacture, employing larger capital and more labour than any other in the conversion of raw material into valuable produce.

There is one material applied almost universally in English agriculture, which acts midway between tillage and rotations on the one hand, in quickening and conserving natural fertility, and the application of purchased manures upon the other, as an artificial addition to this natural fertility—and that is lime. The tables just alluded to show that, excepting the chalk and limestone districts of the country, liming, at intervals varying from six to twenty years, is almost universal. An application of 10 cwt. up to 10 tons per acre, at intervals of four years up to four or five times as long, is the rule of English agriculture. When a large dressing is applied, as of 200 to 300 bushels per acre, a long period elapses before it is applied again; and thereafter a smaller application, as of 30 or 40 bushels in compost, over the clovers before breaking them up for wheat, once in a rotation or in every other rotation, is commonly adopted. It has the effect of rendering farm-yard manure more effective, of making clay lands work more kindly and produce more abundantly, and of diminishing, if not entirely removing, on light soils the liability to finger-and-toe disease in turnips. The instances in which the reports just named declare no lime to be used, are confined to those cases where either the subsoil or the farmer has already once for all filled the soil with an excessive dose.

On all the Prince Consort's farms, and especially on the Shaw and Flemish Farms, lime composts are annually used; the whole series in this, as in other respects, illustrating by their management that practice of using, economising, and supplementing the natural resources of the soil, which has been the subject of these remarks on crop rotations and manures.

We return now to our work of description. The fertility of the Prince Consort's Norfolk Farm is not only created and maintained by land drainage and deep tillage, and by the observance of a good rotation of crops, but, as in all other instances of energetic cultivation, it is added to by liberal

artificial dressings of manure. About 250*l.* worth are annually applied of guano, superphosphate of lime, nitrate of soda, salt, and soot; and in addition to these, the natural manure of the farm is improved by the consumption of no less than from 500*l.* to 700*l.* worth of purchased cattle-food, cake and grain. At the Norfolk Farm the manure thus made lies in open yards until carried to the field. There can be no doubt that great waste thus ensues. A certain amount of decomposition, which is wasteful of its volatile products, goes on wherever a moistened heap of vegetable matter is allowed to accumulate, and a great deal of the soluble products of that decay is also washed to waste. All this is saved at the Prince Consort's Home and Flemish Farms---in the first by carrying, as we have already said, all the soiled litter of the stalls to a manure-house, where rain is not allowed to fall on it; and in the second by manufacturing the manure in a covered yard. Lord Kinnaird says, that in his experience of covered manure-yards he has found seventy cubic yards of the dung made there to be equal in fertilising effect to one hundred taken from similar manure made in open yards. And this difference in the quality of the dung made in the open and covered yards respectively has been quite realised upon the Prince's farms.

We leave now the farms which lie within the bounds of Windsor Great Park, and travelling southwards three or four miles, as seen upon the map (p. 62), we reach the neighbourhood of Bagshot, where other land was held in the occupation of the Prince Consort.

4. THE PRINCE CONSORT'S BAGSHOT AND RAPLEY FARMS.

If 'a great head of game' be considered fatal to good agriculture, farms that are maintained chiefly for the purpose of a covert and provision for their game can hardly be expected to furnish agricultural lessons, except by way of warning. We have, however, here lands mixed up with plantations and intersected everywhere with covers, where pheasants have fallen to a single gun at the rate of one per minute for an hour and a half together,—on which there is nevertheless many a point of interest to the farmer. They are the last of the large number of farms of which the late Prince Consort was the tenant; and to some of the points connected with them, which both the landowner and the tenant-farmer may be interested, we have now to direct attention.

Bagshot Park was the residence of the late Duke of Gloucester. Mr. Toward, now over the Osborne estate, was manager here during the late Duchess of Gloucester's life, and the gardens, then maintained in perfect order, still bear testimony to his taste and skill. The land, sandy and peaty all over that district, is especially adapted for the growth of rhododendrons, and the grounds near the house are a perfect blaze of beauty in the month of May. They are also inter-

esting for the large number of fine specimen trees and shrubs which are here collected. One of the finest plane trees in the country stands close to the house on one side, and one of the finest clumps of cedar trees on the other. One of the few Deodars originally brought into this country stands in the shrubbery — now a noble specimen. Here also are remarkably fine specimens of the Chinese juniper, an unusual example of the Scrub pine (*Pinus Banksiana*), the finest *Cunninghamia* or *Araucaria lanceolata* in England, and a wonderfully fine specimen of the Scotch fir.

It is interesting to learn, as Mr. Standish of the Bagshot Nurseries informs us, that the small-leaved variety, which here presents a straight bole thirty inches in diameter and probably forty or fifty feet in height, is of the Russian — the true Riga — variety of *Pinus sylvestris*, and much the finest of the three known to foresters; the Swiss variety being the least valuable, the Austrian next, and this Riga variety being worth by much the most. Other sorts of pine have capital illustration here.

One or two remarkably large and handsome beech occur. The thorn, in individual trees here and there within the Park, is nowhere larger or better grown. The oak is occasionally very fine; one in particular in front of the mansion is a magnificent specimen. Of the graceful, quick-growing, *worthless* Turkey oak, which flourishes on the same sandy soil with the birch, there are also several good examples.

Like the Norfolk and Flemish, these farms are under the presidency of Major-General the Hon. A. Nelson Hood. Mr. Graham, the intelligent manager under him, was for some time with the late Mr. Wilson upon the Prince Consort's Shaw and Home Farms, which have been already described. Leaving these for Bagshot and for Rapley, he came from an estate which had been long under good management, and was naturally of fair quality, to one which lies within what is naturally one of the poorest districts in the country. He left farms furnished with buildings which emulate, and in some features excel, any others in the island, for land which is very poorly furnished with buildings, and very imperfectly equipped in every way—for one of the poorest districts in the country, where the game-keeper, not the farmer, had been for many years in the ascendant, where the natural circumstances were unfavourable, and where for many years no attempt had been made at their improvement.

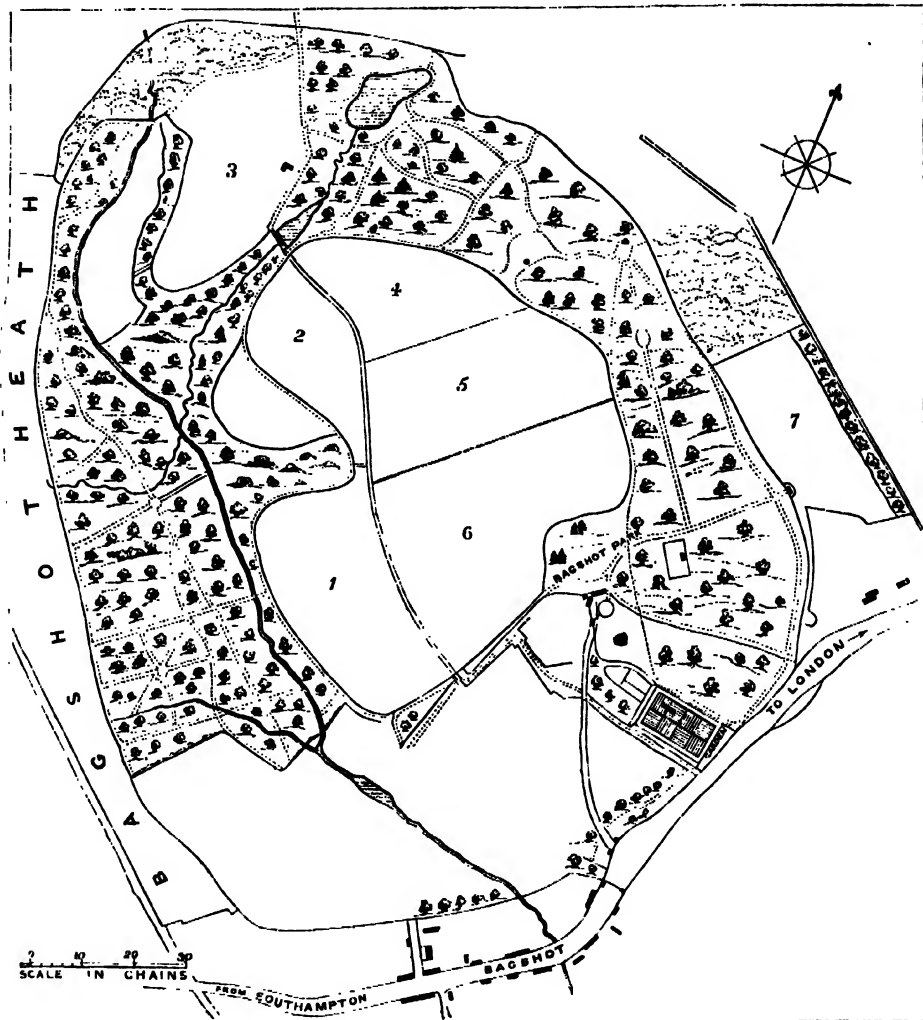
There was, however, even here a good deal of agricultural interest to stimulate a tenant. The land had many years before been under the management of one of the best farmers in the country. The late Mr. Burness, who was latterly with the Duke of Bedford at Woburn, had been manager at Rapley. The buildings erected from his design, though now somewhat dilapidated, possessed many good points. One of the best arrangements of piggeries, since copied in all parts of the country, and now in full operation, was a principal feature. A water-power

threshing-machine, erected long ago, and then guarded night and day from the lawless hands of angry labourers — since, however, for many years disused — was still found to be in working order. The condition of the land, and the quality and quantity of the stock upon it, were at the lowest ebb; and all this, bad enough in itself, was yet a good starting-point for an energetic young man, who desired to carry out with vigour such plans of improvement as General Hood, under His Royal Highness the Prince Consort, might direct.

The Bagshot and Rapley Farms, which are represented in the following Maps, although paying a rent to H. M. Commissioners of Woods and Forests, and worked with the capital of the Prince, were less immediately under his eye than any of the others, both owing to their distance from Windsor, and because they were retained in occupation almost entirely for shooting purposes. Nevertheless, the expenditure year by year needed to bring them into good condition was not grudged, and in a few years' time they will no doubt be as interesting to the farmer as the sportsman.

The process is necessarily tedious. Over the principal part of the land the soil is the poorest black peaty sand and gravel. This, however, is more especially the case at Rapley. The land attached to Bagshot Park is of better quality, and yields fair crops. The accounts of both are kept together, and we learn from them that besides the barley and oats

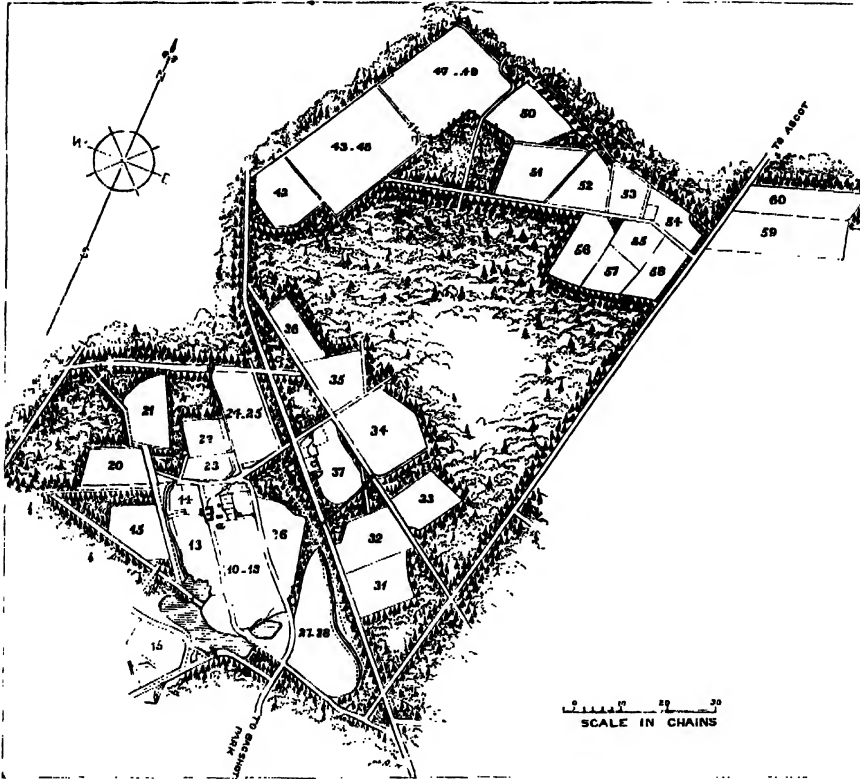
grown on the farm (all consumed by stock), there has been an expenditure annually of nearly 200*l.* on cattle-food, and



MAP OF BAGSHOT FARM

of 180*l.* to 200*l.* a year on guano and artificial manures. In this way, then, besides attention to the drainage of the land, and its due cultivation in a restorative rotation of crops, it is plain

that no means have been left neglected by which a gradual increase of fertility may be attained. That much of the increased produce is and will be destroyed by game is inevitable :



MAP OF RAPLEY FARM

the farms will nevertheless be serving the purpose for which they were intended, which no doubt has been, both to furnish the requisite amount of sport when required, and to supply an example of poor and light land farming, of some interest to a large number of agriculturists.

The Bagshot Park, now occupied by Sir James Clark, Bart., Her Majesty's Physician, includes about 60 acres of pasture and 100 acres of arable land. The adjoining Rapley Farm includes about 120 acres of pasture and 160 acres of arable land. The plough land in the former case is of fair quality. Very promising wheat — a capital plant of red clover and Italian rye-grass (seeded with 20 lbs. and 1 bushel per acre respectively) — fields on which turnips had been fed by sheep, and lying then scarified so as to mix up the soil and sheep-dressing and avoid the loss of the latter in case of rain — and a ploughed wheat stubble ready for the mangold and turnip crop taken over one quarter of the farm — made up the cropping as we saw it early in the spring. The cropping this year (1862) has been as follows:—No. 1, clover; No. 2, vetches to be followed by turnips; No. 3, oats; No. 4, barley; No. 5, mangold wurzel; No. 6, wheat; No. 7, turnips. The other land unnumbered on the map is in permanent pasture. A good deal of this arable land is sprinkled over with trees of oak and thorn; and, lying near the mansion, would add greatly to the beauty of the Park were it laid down in permanent pasture.

At Rapley the rotation includes two years in grass, the other crops being (1) wheat or oats; (2) turnips, mangolds, and potatoes; (3) barley. On comparatively little of the land can a good wheat crop be grown; it is a light, poor soil, which would probably be improved by a dressing of the clay lying not very deep as a subsoil. It is being, and will be,

greatly improved by liberal sheep-farming. Very poor turnips, owing to a bad seed-time, and other circumstances — comparatively poor grass — fair crops of barley and oats, also of potatoes, were grown here last year.

The lupine, too, has been successfully tried. Two bushels of seed are sown in May, without a dressing, in rows nine inches apart. They need diligent hoeing while very young, but as soon as the plants have fairly hold of the ground they grow rapidly, flower in July and August, and by and bye attain the condition of a half ripe crop. A boy with basket and knife precedes the sheep, which are then folded over the land. He cuts the seed into his basket and the sheep feed after him. They eat readily the still succulent stems and leaves ; and the crop has this especial advantage in the eyes of Mr. Graham, that it appears to be distasteful to all kinds of game. A very valuable crop for poor light land is thus available, especially where a great head of game exists — the principal points requiring attention during its cultivation being that it must be sown late enough and folded early enough to avoid frost, which at once destroys it, and that the land be kept clean by hoeing during its early growth. Buckwheat, for the use of the game, is also sown to the extent often of 20 or 30 acres ; $1\frac{1}{2}$ bushels are sown in May, and the crop is cut when most of the seed is formed, and turned carefully until dry enough for harvesting, when it is stacked in the covers ; being paid for, of course, by the game to the credit of the Farm.

The coarse Irish Cup potato is grown to a considerable extent at Rapley. The crop is wholly consumed by pigs, being steamed and mixed with ground oats and barley, also the produce of the farm. The buildings are supplied with water-power for the various purposes of threshing, cutting chaff, and grinding corn; and the yards and sheds and stalls are filled with a good stock of horses, cattle, and swine.

The two farms are nearly contiguous, the two maps do indeed form one, that of Rapley being placed above the one of Bagshot. A good many of the outlying fields in the Rapley Farm are too poor for cultivation. The numbering of the fields is taken from the Prince's map, and the following is this year (1862) the cultivation of most of them:—Nos. 10—12, wheat: Nos. 13, 14, 15, 20, 34, in pasture; Nos. 21, 23, 26, 31, 32, 33, in oats; Nos. 24, 25, in clover; Nos. 27, 28, green crops; No. 22, rye; No. 35, lupines; and No. 37, potatoes.

The farms are worked with five pairs of horses, some of them good Clydesdale mares, from which, by the Prince Consort's prize Clydesdale stallion at the Shaw Farm, colts are bred. There are now ten young Clydesdale horses in boxes and in sheds opening out upon a grass field. The winter stock includes about sixty cattle, half of them stores for fattening in summer and winter, and the remainder fattening beasts, Galloways and Short-horns, receiving 4 lbs. of cake apiece, mixed hay and straw chaff, and Swedish turnips daily.

About 300 sheep have been kept upon the farms—Hampshire Downs and Cheviots. The ewes and lambs are fattened together during summer; the latter breeding flock being out upon the pastures, and the former folded on the turnips. Seven or eight breeding sows of the Berkshire breed are kept, and there are generally sixty or seventy swine of various ages, fattening in the capital L-shaped double range of sties, with central gangway and steaming and food-house at the angle.

The buildings planned by the late Mr. Burness include a couple of square yards, with threshing and other barns at either end, and divided by the central piggery, the one side including byres and feeding-houses, and the other being open to the sun. Opposite one of these yards, on the open side, stand stabling and cart-sheds; and there are outlying houses, granary, poultry-house, &c. They are of wood and tile or thatch, and in a somewhat dilapidated plight.

The main items of receipt upon these farms are from cattle, sheep, pigs, wheat and buckwheat; the expenditure is, as we have said, large in manure, cattle-food, and labour. In the last point especially the expenditure is large, as it must be in all establishments conducted on the patriarchal system of keeping on old servants long after they have lost their efficiency, and pensioning them off when utterly unable to work. It is not to be wondered at that land in these circumstances and naturally poor, full of game, and being gradually brought into condition in spite

of all these drawbacks, should at present be a tax upon the purse and capital of the tenant.

The Bagshot district is especially useful, because of the poverty of its natural condition, for all such operations as need mere standing-ground. This, considering its neighbourhood to London, they can find nowhere cheaper in the country. The manufacture of soldiers out of raw material supplied from lanes and pot-houses all over the country, has thus come to be conducted hereabout on a great scale. And no less true an example of a *manufacture* is furnished by the growth of grapes under glass, also hereabout largely carried on. Compost heaps, bones and ashes, and other fertilising matters, furnish the materials out of which a living plant, in an artificial climate, *manufactures* produce for the Covent Garden Market; and the very same means are in operation on the Prince's farms, under the natural climate, aided, however, by the meagre natural supplies which their poor soils afford, and resulting in the manufacture of material for Smithfield and Mark Lane.

There only remains now to describe the system of accounts by which the practical oversight of the expenditure on these farms has been maintained. Formerly, the annual audit consisted merely in the examination of a cash account, for the several items of which vouchers were presented. There was, of course, an annual valuation and balance-sheet prepared; but the absence

of a sufficiently clear classification and allotment of expenditure throughout the year, under the various heads from which receipts also were derived, rendered it difficult either to exercise an intelligent guidance of the outlay, or to understand the causes to which the profit or loss upon the year's proceedings was properly attributable.

Mr. Toward at Barton, and for the Osborne estate, had devised a very simple form of weekly labour account, which, together with an extract from his cash book, was sent every month to H.R.H. the Prince Consort, and from this, with a valuation at the beginning and close of the year, the year's accounts were prepared by Mr. Harrison, Secretary to the Privy Purse.

The following two pages are to be taken as representing the *outside* pages of this weekly labour account. They are, in fact, the *back* of a folio sheet, on the front of which are drawn columns for name, days of the week, and money paid as wages. The front pages (second and third of the open sheet) are filled first, and then, if more room is wanted, the further names appear on the back (here given). At the foot, on the fourth and first pages of this sheet respectively, are given the abstract of the week's account, and the title of the document. It is to be understood, then, that these two pages are the back (fourth and first pages) of a sheet which is seventeen inches long and twenty-two inches wide, and which is filled with details of the daily work of every labourer, as here drawn on a smaller scale.

THE PRINCE CONSORT'S FARMS:

NAMES	SATURDAY	MONDAY	TUESDAY	WEDNESDAY

ABSTRACT

	£	s.	d.
Labour on Farm			
Haymaking and Harvest			
Gardens and Pleasure Grounds			
Woods			
Roads and Drives			
Fences			
Carpenters and Wheelwrights, Farm			
Draining			
Pensioners			

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THURSDAY	FRIDAY	No. of Days	At per Day	Amount			Signature and Mark
				£	s.	d.	

No.

LABOUR LIST.

For the Week ending the day of 186

	£	s.	d.
Amount	.	.	.

In adapting Mr. Toward's system to the Windsor Farms, the forms have been altered to suit the different style of expenditure, but the plan is essentially the same. Besides the cash book in which all payments and receipts are recorded, and the ledger in which they are arranged under the different headings deemed necessary to convey a clear understanding of how the expenditure has gone, and whence the returns have been derived—besides the banker's book, also, which is in fact the cash book of the farm, for all monies received are paid into the bank, and all payments are made by cheques—besides these, there are two sets of periodical sheets filled up, one of them this weekly sheet of the labour, and the other a monthly statement of payments, of grain and other food consumed, of granary contents, and of the live stock. We give these two sheets as good specimens of the kind of forms required for such a purpose.

There is first the weekly labour sheet just described, recording all the items into which the total weekly expenditure on wages is divided (so many particulars to be entered in the cash book, and transferred to the several accounts thus affected in the ledger); and there is, secondly, the sheet which contains the cash account (payments and receipts) on its inner folio (second and third pages)—the record of granary and other returns on its first page—and the record of task-work payments, and of debts due to and by the farm, on its fourth page. On the four following pages this form is represented, on a smaller scale of course; the size of the whole sheet itself being, as already given, 17 inches by 22.

[illegible]

It is plain that anyone receiving these sheets, at weekly and monthly intervals respectively, each acknowledging all the balances recorded in its predecessor, has a complete account current of the whole establishment; and that, when provided with detailed inventories and valuations of the stock and produce of the land, he has the means of determining year by year the profit or loss of the year's proceedings, together with all the causes to which it has been due.

They furnish the material of a carefully kept ledger, the accounts in which are weekly posted, receiving as their first items the valuation of stock belonging to each, and of debts due to and by each respectively, at the beginning of the year; then all items of sale or purchase, receipt or payment, affecting each during the year; and lastly, a valuation of the stock belonging to each, and of the debts due to and by each respectively, at the close of the year. The final balances under each account are collected in a balance-sheet every autumn, their addition and comparison representing the ultimate financial result of the previous twelve months. We have before us several of the elaborate annual statements in which Mr. Toward's weekly accounts and final valuations have been thus epitomised by Mr. Harrison, so as to yield their annual balances clearly and instructively; several of the weekly and monthly labour and cash accounts, also, of some of the Windsor farms; but it does not appear to us that any public interest would be served by their publication, nor that anything more is required, beyond what has now been given,

to teach the reader how a constant superintendence of expenditure was maintained by the Prince Consort, by means of the periodical cash reports which reached him, and the annual balance-sheets prepared from them.

CHAPTER III.

THE PRINCE AND THE LABOURER.

AMONG the many striking public speeches and addresses of His Royal Highness the Prince Albert, one of the earliest and several of the most impressive related to the condition of the labouring class. It is the object of the following section of this memoir to enumerate and describe the many proofs existing within the Royal estates, upon the Prince Consort's farms, and everywhere within the personal influence of His Royal Highness, of the earnest mind and genuine sincerity with which these addresses were delivered. Nowhere more than in country life, where the owner of the estate, or it may be only the tenant of the farm, comes into daily contact with his poorer neighbours, is there ampler scope for wise and considerate benevolence. How fully all such opportunities were made use of by the Prince will immediately appear in our farther reference to Balmoral, Osborne, and the Windsor farms. Hear, however, first the sentiments which he uttered on these subjects for the guidance of himself and others.

On May 18, 1848, H. R. H. Prince Albert presided at a large and influential meeting held at the Freemasons' Tavern in Great

Queen Street, for the purpose of establishing and popularising the principles on which the Society for Improving the Condition of the Labouring Classes had been founded. He spoke as follows:—

‘ LADIES AND GENTLEMEN,—When four years since this Society
‘ for the Improvement of the Condition of the Labouring Classes
‘ was first established on its present footing, I accepted with
‘ great pleasure the offer of becoming its President.

‘ I saw in this offer a proof of your appreciation of my
‘ feelings of sympathy and interest for that class of our com-
‘ munity which has most of the toil, and least of the enjoyments,
‘ of this world. I conceived that great advantage would accrue
‘ from the endeavours of influential persons, who were wholly
‘ disinterested, to act the part of a friend to those who re-
‘ quired that advice and assistance, which none but a friend
‘ could tender with advantage.

‘ This Society has always held this object before its eyes,
‘ and has been labouring in that direction. You are all aware
‘ that it has established model lodging-houses, loan funds, and
‘ the system of allotments of ground in different parts of the
‘ country; but it has been careful only to establish examples
‘ and models, mindful that any real improvement which was to
‘ take place must be the result of the exertions of the working
‘ people themselves.

‘ I have just come from the model lodging-house, the open-
‘ ing of which we celebrate this day; and I feel convinced that
‘ its existence will, by degrees, cause a complete change in the
‘ domestic comforts of the labouring classes, as it will exhibit
‘ to them, that, with real economy can be combined advantages

‘ with which few of them have hitherto been acquainted ; whilst
‘ it will show to those who possess capital to invest, that they
‘ may do so with great profit and advantage to themselves, at
‘ the same time that they are dispensing those comforts to which
‘ I have alluded to their poorer brethren.

‘ Depend upon it, the interests of classes too often con-
‘ trasted are identical, and it is only ignorance which prevents
‘ their uniting for each other’s advantage. To dispel that
‘ ignorance, to show how man can help man, notwithstanding
‘ the complicated state of civilised society, ought to be the aim
‘ of every philanthropic person ; but it is more peculiarly the
‘ duty of those who, under the blessing of Divine Providence,
‘ enjoy station, wealth, and education.

‘ Let them be careful, however, to avoid any dictatorial
‘ interference with labour and employment, which frightens away
‘ capital, destroys that freedom of thought and independence
‘ of action which must remain to everyone, if he is to work
‘ out his own happiness, and impairs that confidence under
‘ which alone engagements for mutual benefit are possible.

‘ God has created man imperfect, and left him with many
‘ wants, as it were to stimulate each to individual exertion,
‘ and to make all feel that it is only by united exertions and
‘ combined action that these imperfections can be supplied, and
‘ these wants satisfied. This presupposes self-reliance and con-
‘ fidence in each other. To show the way how these individual
‘ exertions can be directed with the greatest benefit, and to
‘ foster that confidence upon which the readiness to assist each
‘ other depends, this Society deems its most sacred duty.

‘There has been no ostentatious display of charity, or munificence, nor the pretension of becoming the arbiter of the fate of thousands, but the quiet working out of particular schemes of social improvement: for which, however, as I said before, the Society has only established examples for the community at large to follow.

‘The report of the proceedings of last year will now be laid before you.

‘I must say — I hope I may say — that the Society has proceeded satisfactorily towards the accomplishment of its objects; and that is owing particularly to the kind feelings, the great experience, and undoubted zeal of Lord Ashley.

‘The next step which we contemplate taking is the erection of a model lodging-house for families. I have no doubt that the meeting will enable us to carry out that step, and that the attention of the public will be more generally directed to the objects which we have in view.’

This noble utterance of wise and large-hearted philanthropy was no mere verbiage or rhetoric. We shall soon see how cordially His Royal Highness himself laboured to discharge the duty which he declared to rest especially on those who, under the blessing of Divine Providence, enjoy station, wealth, and education.

The erection of fitting cottages for labourers, which was an object anxiously promoted by the Prince Consort, is the principal aim of the Labourers’ Friend Society, which he then addressed in his capacity of President and Patron.

The encouragement of Benefit Societies, and of habits of saving and self-help generally, was another object in which he felt great interest. This is especially the field in which the 'Servants' Provident and Benevolent Society' labours. His Royal Highness Prince Albert presided at the annual meeting of this Society, on May 16, 1849.

A deputation had waited upon His Royal Highness at Buckingham Palace—we quote from an edition of his speeches—and submitted to his attention the following facts, viz.:—

That the largest of all the classes of Her Majesty's subjects in this country is the class of Domestic Servants.

That the Society had begun with the fallacious notion, that provision might be made for the old age of servants on a purely benevolent or charitable system—that is, it was erroneously supposed that the subscription of a few shillings yearly from servants, and charitable subscriptions from the public, would provide an adequate maintenance for aged and incapacitated servants. That servants, as a class, are not provident; there being little in the conditions of service which tends to providence: that, in fact, to a very large proportion of this class, pecuniary assistance is necessary in old age. That the number of old servants who are paupers in workhouses is immense. That the Society had adopted the system of encouraging and helping servants to purchase Government Annuities for old age.

The Prince entered fully into the case of the servants, and was so strongly impressed with the importance of making known the system of Government Annuities and of introducing into it the many improvements of which it was capable, that, at the close of a very long audience, when he was urged to preside at a meeting for the support of the Society, His Royal Highness replied:—‘After what I have heard, I think I should be wanting in my duty to the country if I did not comply with your request.’ The following address was delivered by the Prince when he took the chair of the meeting:—

‘GENTLEMEN,—The object for which we have assembled here to-day is not one of charity, but of friendly advice and assistance to be tendered to a large and important class of our fellow-countrymen.

‘Who would not feel the deepest interest in the welfare of their Domestic Servants? Whose heart would fail to sympathise with those who minister to us in all the wants of daily life, attend us in sickness, receive us upon our first appearance in this world, and even extend their cares to our mortal remains, who live under our roof, form our household, and are a part of our family?

‘And yet upon enquiry we find that in this metropolis the greater part of the inmates of the workhouse are domestic servants.

‘I am sure that this startling fact is no proof either of a want of kindness and liberality in masters towards their

'servants, nor of vice in the latter; but is the natural consequence of that peculiar position in which the domestic servant is placed, passing periods during his life in which he shares in the luxuries of an opulent master, and others in which he has not even the means of earning sufficient to sustain him through the day.

'It is the consideration of these peculiar vicissitudes which makes it the duty of both masters and servants to endeavour to discover and to agree upon some means for carrying the servant through life, safe from the temptations of the prosperous, and from the sufferings of the evil day. It is on that account that I rejoice at this meeting, and have gladly consented to take the chair at it, to further the objects of the "Servants' Provident and Benevolent Society."

'I conceive that this Society is founded upon a right principle, as it follows out the dictates of a correct appreciation of human nature, which requires every man, by personal exertion, and according to his own choice, to work out his own happiness; which prevents his valuing, nay, even his feeling satisfaction at, the prosperity which others have made for him. It is founded upon a right principle, because it endeavours to trace out a plan according to which, by providence, by present self-denial and perseverance, not only will the servant be raised in his physical and moral condition, but the master also will be taught how to direct his efforts in aiding the servant in his labour to secure to himself resources in cases of sickness, old age, and want of employment. It is founded on a right principle, because in its financial scheme there is no temptation held out to the servant, by

‘ the prospect of possible extravagant advantages which tend
‘ to transform his providence into a species of gambling, by
‘ convivial meetings which lead him to ulterior expense, or by
‘ the privilege of balloting for the few prizes, which draws
‘ him into all the waste of time and excitement of an elec-
‘ tionering contest.

‘ Such are the characteristics of several institutions, upon
‘ which servants and many of our other industrial classes place
‘ their reliance. And what can be more heartrending than to
‘ witness the breaking of banks, and the failure of such insti-
‘ tutions, which not only mar the prospects of these unhappy
‘ people, and plunge them into sudden destitution, but destroy
‘ in others all confidence in the honesty or sagacity of those
‘ who preach to them the advantages of providence?

‘ Let them well consider, that if they must embark in
‘ financial speculations, if they like to have convivial meetings,
‘ if they claim the right of governing the concerns of their
‘ own body, they must not risk for this, in one stake, their
‘ whole future existence, the whole prosperity of their families.
‘ Let them always bear in mind, that their savings are
‘ capital, that capital will only return a certain interest, and
‘ that any advantage offered beyond that interest has to be
‘ purchased at a commensurate risk of the capital itself.

‘ The financial advantages which the Society holds out to
‘ servants rest upon the credit of the country at large, upon
‘ the faith of the Government, and are regulated by an Act
‘ of Parliament called “ The Deferred Annuities Act.” They
‘ are shortly these: According to published tables, which I

' have before me, persons, whose fixed income is below 150l.
' per annum, can by small instalments purchase annuities de-
' ferred not less than ten years, but beyond that limit to com-
' mence at any period the depositor may name. One annuity
' cannot be more than 30l., but he may purchase distinct
' annuities for his wife, or for his children on having attained
' to their fifteenth year. Should he at any time wish to with-
' draw his deposits before the annuity has commenced, they
' will be returned to him; should he die before that period,
' the deposits will be returned to the heirs. In such cases
' the only loss will be the interest upon the money deposited.

' Although this wise and benevolent measure has been
' enacted so long ago as the third year of the reign of King
' William IV., I find, to my deep regret, that during that whole
' time, only about 600 persons have availed themselves of its
' provisions. I can discover no other reason for this inadequate
' success, but that the existence of the Act is not generally
' known, or that people are afraid of Law and Acts of Par-
' liament, which they cannot understand on account of their
' complicated technical wording. I have heard another reason
' stated, to which, however, I give little credit, namely, that
' servants fear lest a knowledge that they are able to purchase
' annuities by savings from their wages, might induce their
' masters to reduce them. I have a better opinion of the dis-
' position of employers generally, and am convinced that on
' the contrary nothing counteracts more the liberality of masters
' than the idea, not wholly unfounded, that an increase of
' means, instead of prompting to saving, leads to extravagance.

' It is one of the main objects of this meeting to draw
' public attention to this "Deferred Annuities Act," and the

‘ main object of this Society is to form a medium by which
‘ servants may acquire the benefits proffered by it, free from
‘ risk, cost, or trouble.

‘ The other objects are—to provide a home for female
‘ servants out of place, the usefulness of which hardly requires
‘ a word of commendation; to provide respectable lodgings
‘ for men-servants not lodged by their masters; and to estab-
‘ lish a Registry for domestic servants generally, which will
‘ form as well a place of advertisement for their services, as a
‘ record of their characters, from which they can be obtained
‘ upon application.

‘ Anyone who is acquainted with the annoyances and in-
‘ conveniences connected with the present system of “characters
‘ to servants,” will at once see the importance of the intro-
‘ duction of a system by which the servant will be protected
‘ from that ruin which the caprice of a single master (with
‘ whom he may even have lived for a short time only) may inflict
‘ upon him, and the master from the risk to which a cha-
‘ racter wrung from a former weak master by the importunities
‘ of an undeserving servant may expose him. Nor is it a small
‘ benefit to be conferred upon a servant, to enable him, by
‘ appealing to a long record of former services, to redeem the
‘ disqualification which a single fault might bring upon him.

‘ Should we only succeed in inducing the public at large
‘ to consider all these points, we shall have the satisfaction of
‘ having furthered the interests of a class, which we find re-
‘ corded in the Report of the last Census as the most
‘ numerous in the British population.

' I shall now call upon the Secretary to lay before you
' more in detail the points which I have slightly touched upon.'

It was not only, however, through the comforts of his home which he would increase by improvements in the cottage, and by encouraging self-help, but through education of the rising generation, that the Prince Consort laboured in the interest of the labourer. Many passages might be quoted from his speeches in illustration of his feeling here.

A General Conference for discussing the position of the question of National Education, especially in relation to the early age at which the children of the working classes are removed from school, was held on Monday, June 22, 1857, at Willis's Rooms, under the presidency of Prince Albert.

On taking the chair His Royal Highness referred to the progress which National Education had made within this century, notwithstanding the extremely unsatisfactory point beyond which, hitherto, our progress has not passed. Of the imperfect result which is all that has been yet attained, he spoke as follows :—

' It will probably happen that, in this instance as in most
' others, the cause which produces the evil will be more easily
' detected than its remedy, and yet a just appreciation of the
' former must ever be the first and essential condition for the
' discovery of the latter. You will probably trace the cause of
' our social condition to a state of ignorance and lethargic in-
' difference on the subject among parents generally ; but the
' root of the evil will, I suspect, be found to extend into that

‘ field on which the political economist exercises his activity—
‘ I mean the labour market—demand and supply. To dissipate
‘ that ignorance and rouse from that lethargy may be difficult,
‘ but with the united and earnest efforts of all who are the
‘ friends of the working classes it ought, after all, to be only
‘ a question of time. What measures can be brought to bear
‘ upon the other root of the evil is a more delicate question,
‘ and will require the nicest care in handling, for there you
‘ cut into the very quick of the working man’s condition.

‘ His children are not only his offspring, to be reared for a
‘ future independent position, but they constitute part of his
‘ productive power, and work with him for the staff of life ;
‘ the daughters especially are the handmaids of the house,
‘ the assistants of the mother, the nurses of the younger
‘ children, the aged and the sick. To deprive the labouring
‘ family of their help would be almost to paralyse its domestic
‘ existence. On the other hand, carefully collected statistics
‘ reveal to us the fact, that while about 600,000 children
‘ between the ages of 3 and 15 are absent from school, but
‘ known to be employed, no less than 2,200,000 are not at
‘ schools, whose absence cannot be traced to any ascertained
‘ employment or other legitimate cause. You will have to work,
‘ then, upon the minds and hearts of the parents, to place
‘ before them the irreparable mischief which they inflict upon
‘ those who are entrusted to their care, by keeping them from
‘ the light of knowledge, to bring home to their conviction
‘ that it is their duty to exert themselves for their children’s
‘ education, bearing in mind at the same time that it is not
‘ only their most sacred duty, but also their highest privilege.
‘ Unless they work with you, your work, our work, will be

‘ vain ; but you will not fail, I feel sure, in obtaining their
‘ cooperation if you remind them of their duty to their God
‘ and Creator.

‘ Our Heavenly Father, in His boundless goodness, has made
‘ His creatures that they should be happy, and in His wisdom
‘ has fitted His means to His ends, giving to all of them different
‘ qualities and faculties, in using and developing which they fulfil
‘ their destiny ; and, running their uniform course according to
‘ His prescription, they find that happiness which He has in-
‘ tended for them. Man alone is born into this world with
‘ faculties far nobler than the other creatures, reflecting the image
‘ of Him who has willed that there should be beings on earth
‘ to know and worship Him, but endowed with the power of
‘ self-determination, having reason given him for his guide. He
‘ can develope his faculties, place himself in harmony with his
‘ Divine prototype, and attain that happiness which is offered to
‘ him on earth, to be completed hereafter in entire union with
‘ Him through the mercy of Christ. But he can also leave these
‘ faculties unimproved, and miss his mission on earth. He will
‘ then sink to the level of the lower animals, forfeit happiness,
‘ and separate from his God, whom he did not know how to find.

‘ Gentlemen, I say man has no right to do this—he has
‘ no right to throw off the task which is laid upon him for his
‘ happiness ; it is his duty to fulfil his mission to the utmost of
‘ his power ; but it is our duty, the duty of those whom Pro-
‘ vidence has removed from this awful struggle and placed beyond
‘ this fearful danger, manfully, unceasingly, and untiringly to aid
‘ by advice, assistance, and example, the great bulk of the people,
‘ who, without such aid, must almost inevitably succumb to the

‘difficulty of their task. They will not cast from them the
‘aiding hand, and the Almighty will bless the labours of those
‘who work in His cause.’

How cordially the Prince rejoiced in any instance of the success which he thus foretold, he has himself declared in a speech made by him, on March 19, 1857, at the opening of the Golden Lane Schools.

These schools, which are called the Schools of St. Thomas, Charterhouse, are erected at the end of Golden Lane. They are plain unpretending edifices, substantially erected, and well and properly finished inside. Accommodation is provided for 264 boys at desks, and for an equal number of girls in working classes and in the gallery; 372 infants are also accommodated in the galleries and at the writing desks, giving a total of 900 children in all. The rooms are lighted with gas reflectors, so that ample provision is made for evening classes for adults and for those whose occupations prevent their attendance by day. The cost of the building, including warming and school-fittings, but exclusive of the cost of the site, has been 5,681*l*. The other schools in the district, together with these just finished, can accommodate no less than 2,600 children or adults at the same time.

The ceremony of opening these schools took place in the Girls’ School-room, on the first floor, which was quite crowded with a numerous attendance of the friends of Education.

H. R. H. Prince Albert having taken his seat, with the Prince of Wales on his right, replied as follows in answer to an address read by the Rev. W. Rogers :—

‘ MR. ROGERS AND GENTLEMEN, PROMOTERS AND SUPPORTERS
‘ OF THESE SCHOOLS,—I thank you heartily for your kind and
‘ cordial welcome. I rejoice at the opportunity which has this
‘ day been afforded me of visiting this noble establishment,
‘ and my satisfaction in doing so is increased by the circum-
‘ stance that my visit occurs at a period of its existence when
‘ the state of useful developement to which by your exertions
‘ it has attained is about, by a continuance of the same ex-
‘ ertions, to receive a still wider extension.

‘ In the progress of these schools, struggling, I may say, from
‘ the most lowly and humble beginnings up to their present and
‘ noble dimensions, we find a striking exemplification of the Divine
‘ truth, that the principle of good once sown is not destined to
‘ remain dormant, but that, like the grain of mustard-seed, it is
‘ calculated to extend and develope itself in an ever-increasing
‘ sphere of usefulness; and we may confidently hope that what
‘ you have now effected, following this universal law, will not be
‘ limited in its results to the immediate objects of your charitable
‘ exertions, but that it will prove the means of diffusing untold
‘ blessings among the most remote generations.

‘ For you, Mr. Rogers, who have been mainly instrumental,
‘ and at great personal sacrifice, in bringing about this great good,
‘ and for those who have stood by you, and contributed by their
‘ support to the success of your efforts, there can, I am sure, be
‘ no higher source of gratification than in the contemplation of

‘ your own work. The reflection that you have been the instrument, under Divine Providence, of conferring upon the poor and needy in this vast district that greatest of all boons, the means of obtaining for their children the blessings of education and of religious instruction, without which any lasting success in life or any permanent amelioration of their lot would seem hopeless; and, still further, the feeling that this inestimable blessing will be secured in a yet higher degree to their children’s children, will carry with it its own best reward. Still it will be a source of legitimate pride and satisfaction to you to know that your labours have not been unobserved, but that your noble and Christian-like exertions to benefit those who cannot help themselves have attracted the notice and admiration of your Sovereign, and of those who are deputed under her to watch over and promote the education and moral welfare of her people.

‘ The means which you have adopted to effect your work of benevolence appear no less deserving of commendation than the object itself. You have not been content with the bare attempt to force, perhaps upon unwilling recipients, a boon, the value of which might not be appreciated; but you have wisely sought to work upon the convictions of the parents of the children you wish to benefit by extending your assistance only to those who, by a small contribution out of their hardly won earnings, have proved that they are awake to a sense of the vast importance it is to their offspring that the means of being fitted to pass successfully through life, and by honest industry to better their worldly condition, should be brought within their reach.

‘ It is a source of high personal gratification to me that I have been enabled by my presence here this day, and by that of the Prince of Wales, to mark, not only my own appreciation of your labours, but also the deep interest which the Queen takes in the well-being of the poorest of her subjects; and that gratification will be greatly enhanced if, by this public expression of the sympathy of the Queen and of her family and Government, this noble cause shall be still further advanced. Most earnestly do I pray that the same success which has hitherto blessed your labours may continue to attend your future progress, and that your example may stimulate other localities to emulate your useful efforts.’

These extracts from the Prince Consort’s speeches show how cordially and unreservedly he took his place at the head of every movement having for its object the improvement of the labouring classes. We have yet to show how earnestly he worked as well as spoke in their behalf.

1. OF COTTAGE-BUILDING.

The drawings on a following page represent a house containing separate accommodation for four families, which was erected by H. R. H. the Prince Albert, near the Great Exhibition building of 1851, as an illustration of the kind of accommodation which a family requires—and of the means by which it might be compendiously and economically provided.

As stated in a pamphlet issued by the Labourers' Friend Society, His Royal Highness had this building raised on his own account, with the desire of conveying practical information calculated to promote the much-needed improvement of the dwellings of the Working Classes, and also with the hope of stimulating visitors to the Exhibition, whose position and circumstances might enable them to do so, to carry out similar undertakings.

In its *general arrangement* the building is adapted for the occupation of four families, of the class of manufacturing operatives who reside in towns, or in their immediate vicinity.

The most prominent peculiarity of the design is that of the receding and protected central open staircase, with the connecting gallery on the first floor, formed of slate, and sheltered from the weather by the continuation of the main roof, which also screens the entrances to the dwellings. The four tenements are arranged on precisely the same plan, two on each floor. The entrance is through a small *lobby* (*a*—page 208), lighted from the upper part of the door. The *living room* (*b*), has a superficial area of about 150 feet, with a closet on one side of the fireplace, to which warm air may be introduced from the back of the range. Over the fireplace is an iron rod for hanging pictures; and on the opposite side of the room a shelf is carried above the doors, with a rail fixed between them.

The scullery (*f*) is fitted up with a sink (*f''*), beneath which is a coal-bin of slate; a plate-rack at one end, drained by a slate

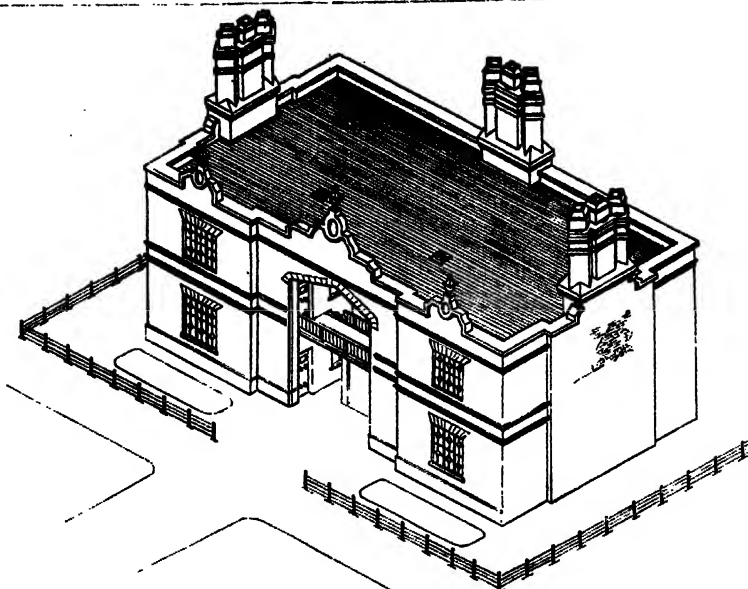
slab into the sink, covers the entrance to the dust-shaft, which is enclosed by a balanced self-acting iron door. The dust-shaft leads into a closed depository under the stairs, and has a ventilating flue, carried up above the roof. The meat-safe is ventilated through the hollow brickwork, and shelves are fixed over the doors. A dresser-flap may be fixed against the partition.

The *sleeping apartments* (*c*, *d*, and *e*) being three in number, provide for that separation which, with a family, is so essential to morality and decency. Each has its separate access, and a window into the open air; two have fireplaces. The children's bed-rooms (*c*, *d*) contain 50 feet superficial each; and, opening out of the living-room, an opportunity is afforded for the exercise of parental watchfulness, without the unwholesome crowding of the living-room by its use as a sleeping apartment. The parents' bed-room, with a superficial area of about 100 feet, is entered through the scullery—an arrangement in many respects preferable to a direct approach from the living-room, particularly in case of sickness. The recess in this room provides a closet for linen. In each of the bed-rooms a shelf is carried over the door, with a rail fixed beneath it.

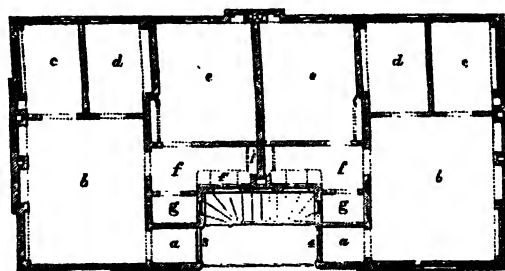
The same pipes which carry away the rain-water from the roof serve for the use of the closets (*g*).

The peculiarities of the building in respect of constructive arrangement are the exclusive use of hollow bricks* for the

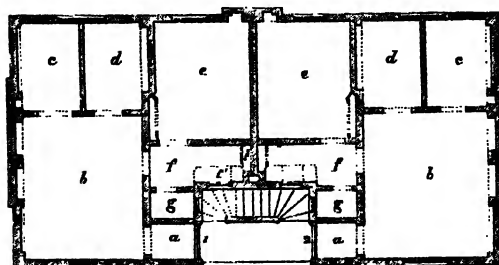
* It is right to mention the fact that where the hollow bricks, here praised, have been used, the houses have proved certainly colder.



ISOMETRICAL PROJECTION



PLAN OF UPPER FLOOR



GROUND PLAN

30 FEET

walls and partitions (excepting the foundations, which are of ordinary brickwork); and the entire absence of timber in the floors and roof, which are formed with flat arches of hollow brickwork, rising from 8 to 9 inches, set in cement, and tied in by wrought-iron rods connected with cast-iron springers, which rest on the external walls, and bind the whole structure together; the building is thus rendered fire-proof, and much less liable to decay than those of ordinary construction. The roof-arching, which is levelled with concrete, and covered with patent metallic lava, secures the upper rooms from the liability to changes of temperature to which apartments next the roof are generally subject, and the transmission of sound, as well as the percolation of moisture, so common through ordinary floors, is effectually hindered by the hollow-brick arched floors.

The external and main internal walls are of patent bonded brickwork, which has the important advantages of securing dryness and warmth, with economy of construction: and another great benefit arising from the use of hollow bricks is, that where they are laid double, in parallel courses, without headers, as in the patent bonded brickwork, the internal face of the wall is sufficiently smooth to render plastering unnecessary.

The advantages afforded by the use of hollow bricks in securing an effective system of insensible *ventilation*, deserves particular notice. Fresh air is admitted from any suitable point of the exterior of the building to a chamber at the back of the living-room

fireplace, and, being warmed there, it may be conducted to any convenient place of exit above the level at which the fresh air is admitted. Vitiating air may be conveyed either into the chimney flue or to any other place of exit through the upper wall courses.

The mode of fire-proof construction, and the general arrangement of the fittings of Prince Albert's model cottage, have since been used in the Model Houses built by the Society for Improving the Condition of the Labouring Classes, under the direction of Henry Roberts, Esq., F.S.A., their honorary architect. This model house was removed at the close of the Exhibition, and it has been since rebuilt in Kennington New Park, Surrey.*

* To this short notice of the model cottages of 1851, we add the account which Mr. Roberts, F.S.A., Honorary Architect to the Labourers' Friend Society, gives of them, in his pamphlet 'On the Essentials of a Healthy Dwelling' (Ridgway). Mr. Roberts says:—

'The Commissioners for the Exhibition of 1851 having replied to an urgent application made for a site, "that a model lodging-house does not come within the design of the Exhibition," a memorial on the subject was presented to his Royal Highness, who immediately expressed the most lively interest in the project, and a desire that the contemplated model houses should be constructed on his own account, in effecting which, it was my privilege to act for his Royal Highness as honorary architect. With much personal trouble to the Prince, the

requisite official consent of four Government departments was obtained, for placing the houses in the Cavalry Barrack yard, opposite to the Exhibition.

'Amongst the number of visitors to the Prince's model houses, amounting to upwards of 250,000, many gave evidence of their having duly appreciated the object for which they were placed in the Exhibition, viz., the conveyance of practical information, calculated to promote the much-needed improvement of the dwellings of the working classes, and also the excitement of those whose position and circumstances enable them to carry out similar undertakings, and thus, without pecuniary* sacrifice, permanently to benefit those who are greatly dependent on others for their home and family comforts. The building was adapted for the occupation of

* This point was justly held by H.R.H. to be of primary importance to the adequate extension of the work. The detailed estimated cost of the model block of four houses was 458*l.* 5*s.* 6*d.*

The following are references to index letters on the plan :—

a Porch.
b Living-room.
c, d Children's bed-rooms.
e Principal bed-room.

f Scullery, containing—
f' Sink, plate-rack
f'' Meat-safe, &c.
g Water-closet.*

four families of the class of manufacturing and mechanical operatives who usually reside in towns, or in their immediate vicinity—those, in fact, by whose labour the larger portion of the objects in the Exhibition had been produced.

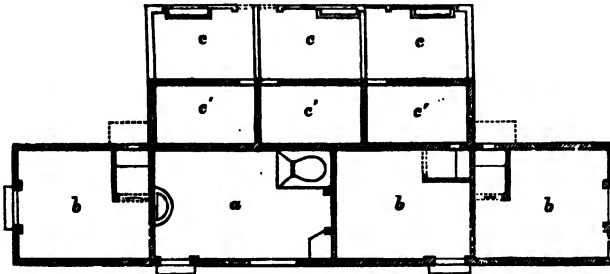
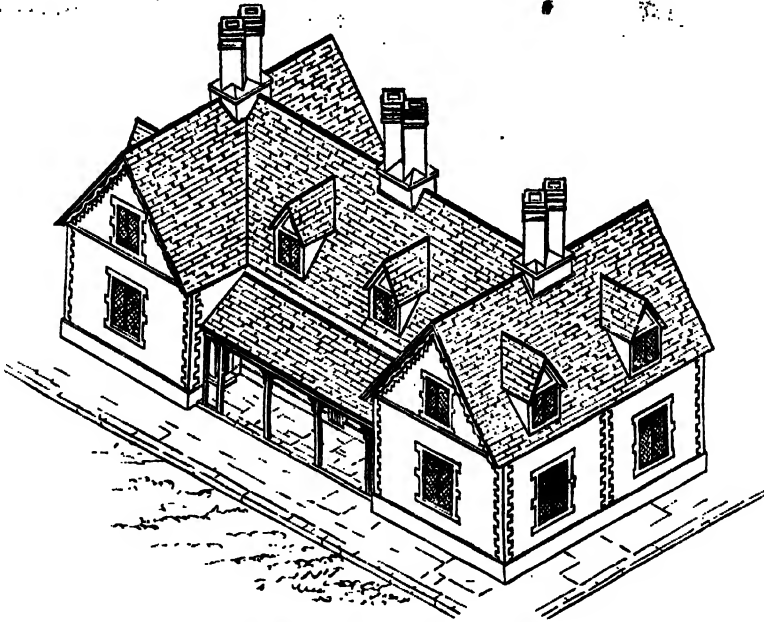
'The open staircase and gallery, giving access to the upper-floor tenements, were prominent features in the arrangement of these dwellings, and their subsequent adoption in buildings constructed for working people in towns has come under my notice in Edinburgh, at Liverpool, Ramsgate, Brighton, Windsor, and other places, as well as in London and on the Continent.

'The example which may, perhaps, be pointed to in London as bearing the closest resemblance to the original structure, and as fully answering in a pecuniary point of view, is at Cowley Street, Shadwell, close to a station on the Blackwall Railway, where a number of miserable dwellings, tenanted by the lowest class of persons, came by inheritance into the possession of a private gentleman, W. E. Hilliard, Esq., of Gray's-inn. Actuated by the most philanthropic views, he decided on endeavouring to improve, not only his own property, but also by example the immediate neighbourhood; and his efforts have been crowned with signal success. The old dwellings have been replaced by an entire street of considerable length; on both sides of which houses for accommodating in the whole 112 families have been built, on the general

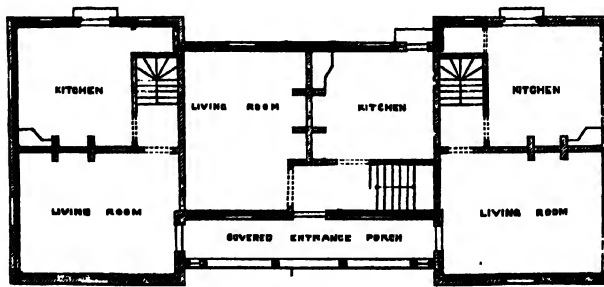
plan of the Prince Consort's Exhibition model houses, with open staircases, giving access to the upper-floor tenements. The twenty-eight blocks of four houses cost 487*l.* each; and, after allowing for ground-rent and all charges, I can state on the authority of the owner, that "they continue to pay upwards of 6, in fact nearly 7 per cent. as a net return on the investment; and what," he adds, "is perhaps of more consequence, they are almost constantly let, and are appreciated by the tenants, who, as a rule, are pretty stationary, and not migratory, as that class frequently are."

'Scarcely any foreigners who visited the Exhibition of 1851 returned without examining the Prince's model houses, and but few left without carrying back to their several countries some of the publications bearing on the improvement of the dwellings of the labouring classes, which were there abundantly distributed. My own opportunities of judging of the effect of this little structure enable me to say that it gave to the movement an impulse such as it has not received from any other single effort. The descriptive account of the building was translated into German and published at Berlin: much of it also appeared in French.'

* Experience has sufficiently proved that the closet should always be in an out-house—never in the dwelling-house.



PLAN OF OUT-BUILDINGS



GROUND PLAN.

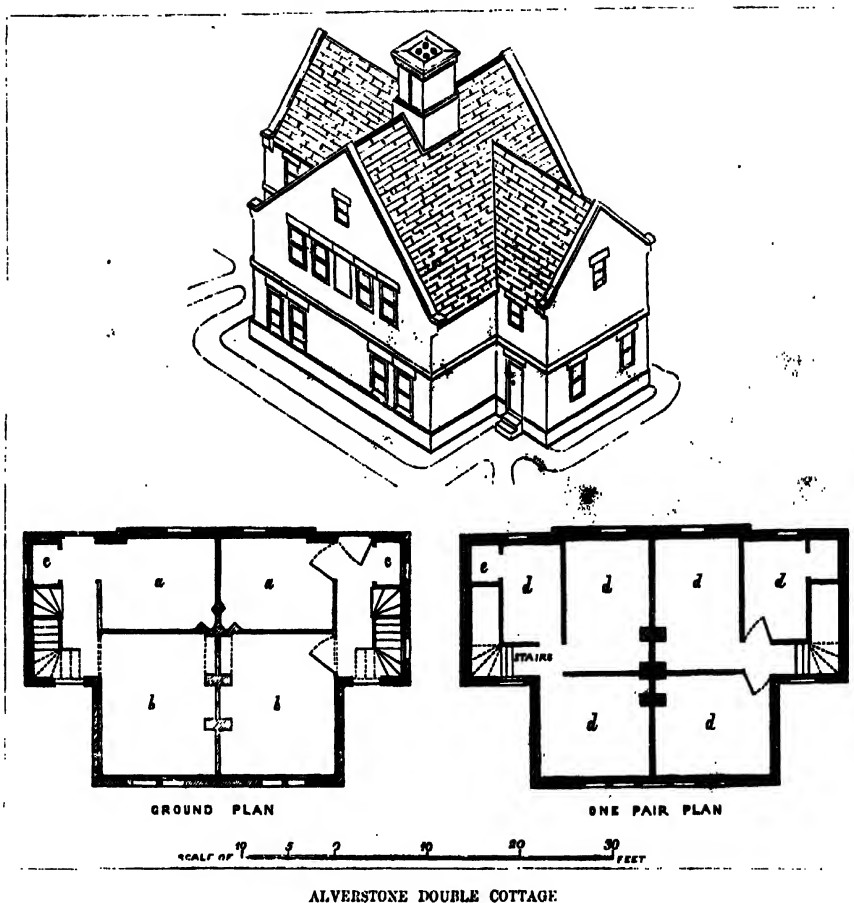
0 10 20 30 FEET

BRICKFIELD COTTAGES, OSBORNE ESTATE

We have given thus in some detail an account of the first specimen of cottage-building in which the Prince Consort had particularly interested himself. We have yet to describe the improvements in respect of cottage accommodation which he directed on his estates at Osborne and Balmoral.

The drawings on pages 212 and 214, represent blocks of cottages erected on the Osborne Estate—the so-called Brickfield (threefold) and Alverstone (double) cottages respectively. It will be seen that, better than the plan on which the model cottages of 1851 were built, these have provided a kitchen and a living-room in addition to three bed-rooms. The plan of the Brickfield cottages—a block of three—seems to us to unite ample accommodation with great elegance of elevation. The outhouses, of which a good plan is given in the drawing on page 212, provide a common wash-house (*a*), with separate wood-house (*b*), piggery (*c'*, *c*), &c., for the three cottages respectively.

In the case of the Alverstone double cottages (page 214) we have kitchen (*a*), living-room (*b*), larder (*c*), on the ground-floor, the bed-rooms (*d*), with cupboard (*e*), on the upper floor. The reference letters in both the plans, with the scale, sufficiently indicate the nature and extent of the accommodation afforded. It is only necessary to add that the rents charged vary from 1*s.* 6*d.* to 2*s.* 6*d.* weekly—that throughout all the cottages the system of double external walls is adopted; the full width of 15½ inches being made up of 9 inches and 4½ inches respec-

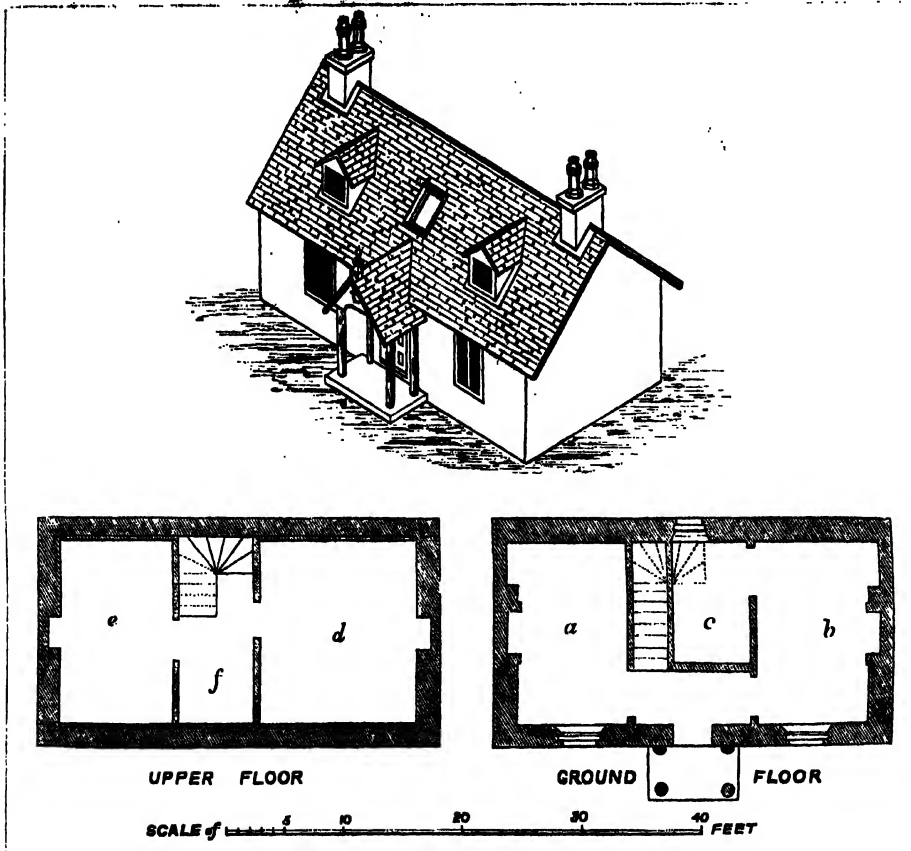


tively, with a separating interval of 2 inches, adding greatly to both warmth and dryness.

Mr. Chadwick, C.B., informs us that the death-rate on the Osborne Estate amongst the labouring classes is only 12 in 1,000, the rate for the whole kingdom being 23 in 1,000, and that of the best rural districts known elsewhere being about 17. There can be no doubt that the reduced rate at Osborne has

been due to the intelligent attention paid to the sanitary condition of the cottages. 'It may be said,' adds Mr. Chadwick, 'that if all the cottage property in the United Kingdom were maintained in the same condition as that of Her Majesty and H.R.H. the Prince Consort, the death-rate would be reduced more than one-third, or nearly one-half. It would be as if every third year there were a jubilee, and there was no sickness and no deaths.'

To these illustrations we add others of the cottages erected

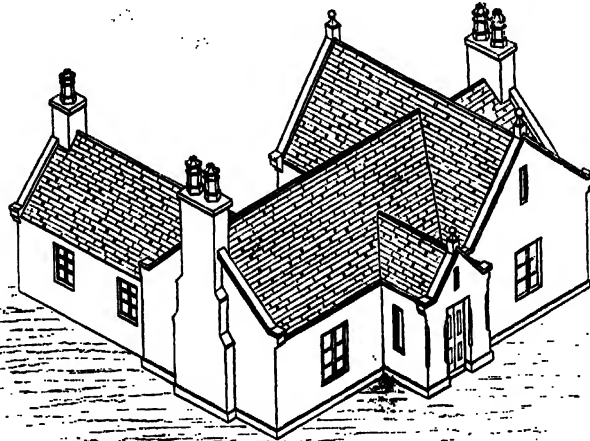


LABOURER'S COTTAGE AT BALMORAL

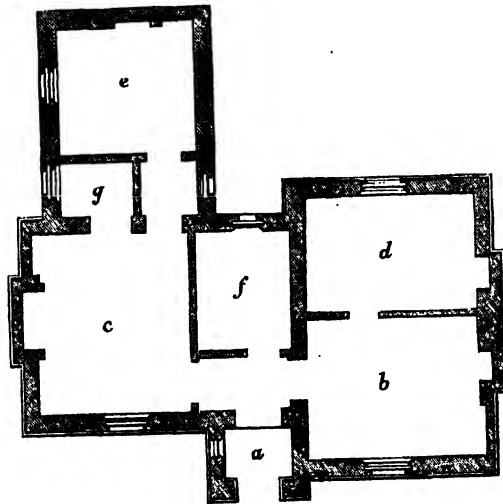
at Balmoral. On pages 215 and 217 are given drawings of cottages built for labourers and tradesmen respectively. The drawings on page 215 are of a cottage for a labourer—four-roomed (*a, b, d, e*), with space (*c, f*) for a bed-closet in addition, both on the ground-floor and above. Built substantially of expensive mason-work, being of granite, they cost about 150*l.* a-piece, though not above 2*l.* or 3*l.* per cent. upon that sum is charged as rent. The wages of the ordinary ploughman, for whom they are intended, are, in that district, from 16*l.* to 20*l.* per annum with food, or 2*s.* 6*d.* a-day if paid in money only.

The plan on page 217 represents the superior accommodation provided for the class of small tradesmen on the Abergeldie Estate. The rooms are all on one floor—*a* being the house, *b* and *c* living rooms, *d e* and *f* bedrooms, and *g* a closet.

In the case of all these cottages the plans were prepared upon the suggestion of His Royal Highness, receiving corrections from his hands during their design, and receiving superintendence from him during their erection. Moderate rents have been in every case charged—the advantage to the estate being considered, not in the direct addition of annual money return, but in the establishment upon it of a healthy well-conditioned labouring population.



ISOMETRICAL PROJECTION



GROUND PLAN

SCALE 5 10 20 30 40 FEET

TRADESMAN'S COTTAGE AT ABERGELDIE

2. BENEFIT SOCIETIES.

Besides the direct personal effort and expenditure by which the sincerity of those noble addresses on the improvement of the Labouring Classes, which have been already quoted, was so amply proved, the patronage and assistance of His Royal Highness the Prince Consort were freely granted to every Society within his reach having the same object in view. And especially were they granted wherever either self-help, the most powerful of all agencies for such a purpose, was being aroused, or that of others was being economically or profitably engaged.

Windsor is surrounded by Societies of this kind thus patronised; and it is not too much to say that there is not a cottage of a well-conducted family of the labouring class, within some miles of the Castle, which does not contain within it some proof of the Prince Consort's benevolent interest in their behalf. We name some of these Societies here, for their history is, through their connection with the Prince, proper for notice in this chapter.

The Windsor Royal Society, under the patronage of Her Majesty the Queen and H.R.H. the Prince Consort, was formed about ten years ago, to promote and carry out the improvement of the dwellings of the working classes in Windsor. It is constituted on the principle of a Joint Stock Company with limited liability, with a capital of 10,000*l.*, and power to increase the same.

The amount of dividend payable to the shareholders is limited to five per cent., leaving any surplus return available for the extension of the Society's operations. Donations are also received from those who prefer thus aiding the objects of the Society, but they are to be strictly applied to office expenses, or to such other outlay as may fairly be considered to be peculiar to the working of a Company in distinction from the operations of a private builder.

Freehold ground, midway between the Long Walk and the Cavalry Barracks, containing nearly $1\frac{1}{2}$ acre, has been purchased of the Woods and Forests, for 287*l.* 19*s.* 3*d.*, including expenses, and laid out for the erection of two rows of houses, opposite one another, to accommodate, together, about forty families, each having a small garden. A contract for building one half of these houses was made for 2,240*l.*

The houses are in five blocks, the centre block and the two corner blocks each combining two plans, and the remaining blocks being alike in plan. There are four tenements on each of these five plans; twelve of them have three, and eight, adapted for smaller families, have two bed-rooms each.

The centre building, 90 feet in length, contains eight tenements, four on the ground floor and four on the upper floor. The middle compartment is on the plan of H.R.H. Prince Albert's Exhibition model houses, somewhat increased in scale — these four tenements have three bed-rooms each. On either

side is a house arranged for two families, one above the other, with distinct entrance access, and a fire-proof floor between them—these tenements have two bed-rooms. The next building, on either side, 36 feet in length, is a pair of double cottages, with living-room, scullery, and pantry below, and three bed-rooms up-stairs.

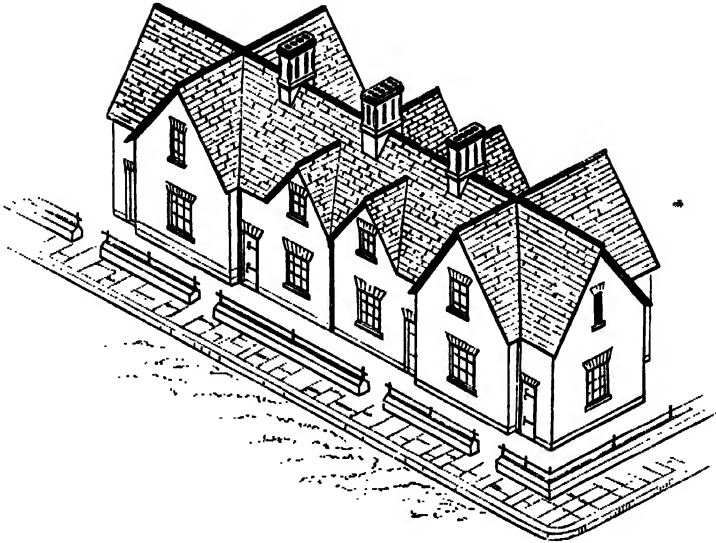
Each of the two extreme buildings, 70 feet in length, comprises two cottages in the centre, with living-room, scullery, pantry below, and two bed-rooms over, while the two outer cottages have three bed-rooms over. Of these two extreme buildings an isometrical drawing and plans of the ground floor and bed-room floor respectively are given in the following page. The whole are constructed with hollow bricks, similar to those used in the Exhibition model houses. The following is an index to the reference letters :—

<i>a</i> Living-room, 13 ft. 6 in. by 12 ft. 6 in.	<i>f</i> Bed-room, 10 ft. 5 in. by 7 ft. 5 in.
<i>b</i> Scullery, 9 ft. 4 in. by 7 ft. 5 in.	<i>g</i> " 13 ft. 6 in. by 7 ft. 8 in.
<i>c</i> Pantry.	<i>x</i> Tools.
<i>d</i> Lobby.	<i>y</i> Water-closet.
<i>e</i> Bed-room, 12 ft. 6 in. by 10 ft. 3 in.	<i>z</i> Ash-pit.

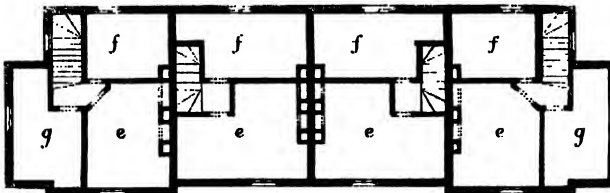
The buildings* were designed by Henry Roberts, Esq., F.S.A., whom we have already quoted.

In 1861, the ninth year of the Society's establishment, the Directors could give the following account of the financial condition of the Society :

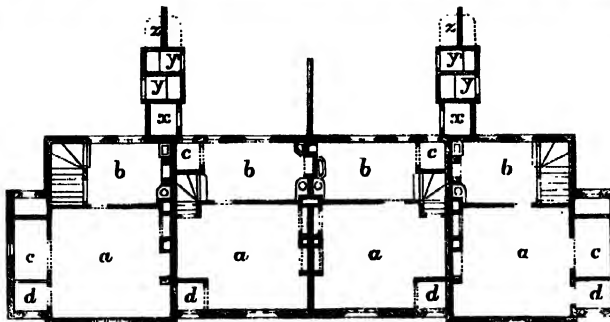
* The working drawings have been lithographed, and are published by the Society for Improving the Condition of the Labouring Classes, 21 Exeter Hall, Strand.



ISOMETRICAL PROJECTION



UPPER FLOOR



GROUND FLOOR

0 10 20 30 40 FEET

The paid-up Capital of the Company (including a loan of 320*l.*) now amounts to 9,020*l.*, which, except a small balance of 13*l.* 15*s.* 6*d.*, has been expended as follows :—

1. In land and cottages forming the Model Cottages (freehold)	£6651	12	9
2. In the Church Street lodging-house (leasehold)	1032	14	6
3. In the land at the back of the Model Cottages (partly freehold and partly leasehold), and in the formation of the road	806	0	10
4. In the lodging-house in North's Lane	515	16	4
	<hr/>		
	£9006	4	5

The sum of 6651*l.* 12*s.* 9*d.* has produced net during the past year 290*l.* 10*s.* 5*d.*, or nearly 4½ (4.36) per cent.

The sum of 1032*l.* 14*s.* 6*d.* has produced net 40*l.* 7*s.* 1*d.*, or nearly 4 (3.9) per cent.

The sum of 806*l.* 0*s.* 10*d.* has produced net 7*l.* 18*s.* 1*d.*, or about 1 (.98) per cent.

And the sum of 515*l.* 16*s.* 4*d.* has produced net 37*l.* 5*s.* 11*d.*, or above 7 (7.22) per cent.

It is therefore clear that if the 806*l.* 0*s.* 10*d.* was rendered productive, all difficulty would be removed; or if the land were sold, and the capital (803*l.* 0*s.* 10*d.*) restored, then the position of the Company would be satisfactory, and the remaining capital sums, amounting to 8,200*l.* 3*s.* 7*d.*, would produce a net return of 368*l.* 3*s.* 5*d.*, or nearly 4½ (4.48) per cent. This would be assuming that the land would only repay its cost and the cost of constructing the road; but when it is recollected that new buildings are being raised in the neighbourhood, and that land is in request, it is believed that the land now in hand will finally realise upwards of 1200*l.*

As a means of improving the condition of the Company, the Directors propose, at an early period, to sell the building land in question, which is now almost unproductive. In a financial point of view, therefore, they are still sanguine as to the successful result of the undertaking.

It is satisfactory to observe that the New Lodging House in North's Lane, on which 515*l.* 16*s.* 4*d.* has been expended, has proved most successful, and has produced, during the past year, a return of upwards of 7 per cent. The conveniences

and comforts of this Lodging House appear to be fully appreciated by the working classes, as the rooms have been constantly occupied. The attention of the Directors will be given to the expenditure of further capital, when the building land is sold, towards extending the operations of the Company in this direction.

The Directors have had their attention drawn to the purchase of cottage property in this locality, with the view of improving the dwellings of the industrial classes; but they have not hitherto been able to find property of such a description as would justify them in recommending the Proprietors to expend further capital for that purpose.

The Report goes on further to announce a dividend of $3\frac{1}{2}$ per cent. on the paid-up capital, and to intimate with thanks the receipt of the dividends due to H. R. H. the Prince Consort, to the Hon. and Very Rev. the Dean of Windsor, and to W. Vansittart, Esq., M.P., as contributions to the Donation fund for the year.

We refer to the proceedings of this Society here, because the patronage of the Prince has been unquestionably an element in its success; and also because every fresh example of successful management of this kind helps forward the cause which he had so heartily in view.

Major-General Seymour, who presides over the Windsor Cottage-Building Society, has kindly given us the reports and particulars of several other more directly mutual benefit societies, which were either originated at the instance of His Royal Highness or patronised by him from their origin. Among these are the Royal United Benefit Society, and the Windsor and

Eton Annuity Society, all of them receiving the periodical contributions of their members from among the labouring class, and securing to them help in sickness, an annual income during old age, or assistance for their families at death. We need not go into any details of their constitution, history, and success, because such institutions exist in almost every locality: and where the management is, as here, in the hands of trustees of sufficient authority and weight—where the funds are invested in Government securities—and where the conditions as to payments, and receipts, and valuations, are regulated by trustworthy actuaries, the success of such institutions is everywhere secured. They are named here, as proving by the numbers in which they have clustered around the Prince Consort's name, as the Patron of them all, how cordial was his willingness to befriend every opportunity given to the working man to help himself.

In the same class with these institutions should be named the Windsor Royal Dispensary and Infirmary, and the Eton and Windsor Savings' Bank, to both of which the Prince gave his cordial support.

The last institution on our list is one in which His Royal Highness took especial interest. The Windsor Royal Association for Improving the Condition of the Labouring Class, presided over by Major-General F. H. Seymour, arose in 1850 from a desire expressed by H.R.H. the Prince Consort to bestow

some mark of favour on cottagers in and around Windsor, who were diligent in keeping their homes tidy. The design enlarged as it grew, and eventually it embraced every kind of industrial occupation. Neat cottages, well-cultivated gardens or allotments, the bringing up of families honestly, long service of labourers, artisans, and domestics, especially of young persons in their first situations --- are the objects sought out and rewarded. Special notice is taken whether children have been duly sent to school, whether sick clubs, savings' banks, or other provident institutions, have been paid into, or assistance given to poorer relatives. It may be added, that, although religious observances do not fall within the direct object of the Association, yet, in the case of allotments, to labour in them on any hour of the Sunday is a disqualification for reward; and while there is no intention of holding out the hope of temporal favour on account of attendance upon public Divine Worship, yet the subject is inquired into, it being assumed that the habit is a characteristic mark of every well-regulated family.

Besides rewarding the above-mentioned cases, which are considered to be the best proofs of persevering diligence, the Association also provides encouragement for the cultivation of honest skill or any useful talent. For this purpose, an exhibition is held at the Annual Meetings of garden produce of every kind, and of specimens of handicraft, whether in works of taste or usefulness, executed by cottagers in their leisure hours; and prizes are awarded for the best specimens.

As much care as is possible is taken to secure the selection of well-deserving persons. Recommendations for rewards, and for leave to exhibit, are given by Subscribers or by the Committee. To facilitate the exercise of this privilege by subscribers, forms of recommendation are sent to them every year some weeks before the recommendations are required to be given in ; and the rules of the Association are printed at the back of the forms. Honorary Secretaries, assisted by gentlemen residing in the districts for which they act, go round every year to inspect the cases recommended to the Society ; and they are responsible to the Committee, who finally accept or reject the Candidates for reward. We extract this statement from a pamphlet* giving a summary view of the objects and progress of this Institution.

The rewards have been distributed at the Annual Meetings, by the Prince Consort himself, and were originally given in money paid at the time ; but, since the year 1856, part of the money has been paid into the Savings' Bank ; and the Savings' Bank book is given, instead of the money, to the recipients of the prizes, in the hope that many may thus be induced to continue to be depositors, and increase the sums invested, by their own savings. In 1859 it was found that 163 prizemen of former years remained as depositors in the Savings' Bank, entirely through the instrumentality of the Association. During the last two years, the rule of giving honorary prizes

* Printed by E. P. Williams, Eton.

without money has been acted upon, in all cases of persons above the need of pecuniary aid; and these tokens of approval are valued. At the Annual Meeting, in order to cherish a kindly feeling, and add to the day's enjoyment by the poor, a dinner has been provided on the ground for all persons receiving rewards, as well as for their wives in cases where they have been instrumental in earning the reward; and likewise, hitherto, for all exhibitors.

It is a consideration of no small account, that, in the carrying out of these plans, it can scarcely fail but that every well-deserving member of the labouring class in the associated parishes must, in the course of years, come under the notice of the Association, partake of its bounties, and be cheered and encouraged by its sympathy and honourable approval.

It would leave on the mind of the reader an imperfect view of the design and influence of the Association, if this statement of its operations closed with the account of benefits to the persons receiving prizes from its funds. The Association has a wider scope. It extends its care, as occasion arises, to any question of a practical kind which may be brought before it. Thus, it has taken an active part in the extension of the Allotment System, from a conviction of its extreme importance to the health, comfort, and moral improvement of the labourer. The Committee has established allotments in Windsor, where none existed before, and undertaken the management of

others previously formed in the neighbouring parish of Clewer. There are now ninety-four allotment tenants in connection with the Association, and it is hoped that more land may yet be obtained for so desirable an object. The Committee has also taken up the question of model or improved dwelling-houses, and with signal success. Certain gentlemen having a few years ago originated the design, but being unable to carry it out from want of any public organisation, the Committee brought it forward, and formed the 'Royal Society for providing better Domestic Accommodation for the Industrial Classes,' to whose operations we have already referred.

From the year 1850, when the Royal Association was formed, when 88 subscribers contributed 121*l.* to its funds, and when 31*l.* was given in prizes to 22 persons, it has grown, until on its jubilee year 1860, the subscribers numbered 213—the prize fund amounted to 275*l.* 15*s.* 6*d.*—as much as 93*l.* was received from visitors to the annual Flower Show and 100 prizes were awarded, amounting in all to 263*l.*

Since its establishment it has administered a sum of nearly 3,000*l.*, out of which nearly 2,300*l.* has been given in prizes and rewards to upwards of 1,600 persons. During this period it has induced a considerable number of the labouring class to employ their leisure hours in useful or tasteful industry; it has improved and extended the Allotment System in the neigh-

bourhood; and it has led to the formation of another Society which has provided many greatly improved dwellings for the poor, and proved that such buildings may be made to yield a fair profit on the outlay.

The Report of the Association for 1860 states that the greatest possible interest has from the commencement been felt by Her Majesty and H.R.H. the Prince Consort in all its proceedings, and their support has been the mainspring and stay of all its efforts. His Royal Highness, who graciously accepted the office of President of the Association, condescended, often at much inconvenience to himself, to preside at all the Annual Meetings and distribute the rewards, with the exception of one meeting only, when prevented by illness. The Committee considers it to be an honour to be the medium both of conveying to the working classes of the neighbourhood the assurance of the parental care and sympathy shown towards them by the great endeavours made by Her Majesty and the Prince Consort to improve the condition of their families and their homes, and also of making known in other ranks of society the high example here set of thoughtful and beneficent regard for the feelings and difficulties of the poor.

On the twelfth Annual Meeting of the Association (1861) His Royal Highness the Prince Consort, accompanied by the Prince of Wales, was present for the last time. The several candidates entering the royal tent in succession received from the hands of

the Prince, partly in money and partly in a savings' bank certificate, the rewards to which they were respectively entitled; and, in addition to this, a card was given to each intimating the award of the premium, with the circumstances under which it had been received; and to this card His Royal Highness, as patron of the Institution, there and then affixed his signature. These tokens of his personal interest are now to be found in almost every cottage of a well-conducted family all round Windsor—and very highly are they valued. During the past year (1862) the proceedings of the institution, in mourning for its great loss, have necessarily been conducted as privately and quietly as possible. The exhibitors of garden produce, vegetables, and handicraft, forwarded indeed their articles to the Town Hall as usual on the Annual Exhibition day in June, to be there inspected by the judges; but the prizes then awarded were distributed in each district separately, by the honorary secretary, with as little display as possible. The prizelolders were presented on their tablets with a photographic likeness of His Royal Highness, which was the best substitute the committee could devise for the royal autograph which, in former years, it had been their privilege to receive.

It is plain from the account thus given of the Society's proceedings, that it is energetically engaged in a most useful career. We do not attempt to hide the fact that *prizes*, if that word must be retained, for moral conduct, for personal worth,

and for continuance in service, have been condemned; nor is it attempted to defend them on principles of abstract right. They are, nevertheless, an institution to which both labourers and gentry have been long accustomed in South and Midland England; and its destruction would be the severance of a useful tie between classes which are naturally far enough apart.

The Prince Consort, aiming practically at a useful end through the usual and accustomed channel, and not agreeing with the condemnation above alluded to, gladly threw the weight of his personal influence in furtherance of this and every other opportunity afforded him of enlisting the sympathies of all classes in a common useful object; and of benefiting the labouring class, by the proof which was thus given them, that their employers are their friends, and that the highest in the land watch their progress and improvement with interest and goodwill.

3. EDUCATION.

We have no right in an agricultural memoir to recite the many illustrations which exist in the history of the past twenty years of the Prince Consort's hearty interest in the work of national education. From one of his public addresses on this subject we have indeed made quotations, but the point to which His Royal Highness then alluded—the shortness of school life in the case of the children of labourers—is especially a difficulty in the agricultural districts, and thus suitable for notice here.

There are but two ways of meeting it; and in both of them efforts, under the direction of the Prince, were made, and a short reference to these must close this chapter. The one is the improvement of the instruction given in our common schools, so that it shall be made obviously plain to the labourer himself how much his child loses by being taken from his school too soon. The maintenance of good schools on the Osborne and the Balmoral estates has been named.

The other method of meeting the difficulty of imperfect education during boyhood, is by encouraging the use of evening schools during youth and manhood; and here, too, the Prince Consort gave his willing aid. Libraries in the lodging-houses for the unmarried labourers exist at both the Shaw and Flemish Homesteads. At the former, too, a schoolmaster comes during the winter evenings and holds a class, when reading, writing, and arithmetic are taught, the attendance being registered. At the close of the season each of the young men writes a specimen passage from dictation, or a short report from memory of some lecture that has been delivered to them on one of the winter evenings. Specimens of ability in figures and in penmanship are thus collected, and the whole forms a very creditable illustration of the 'scholarship' that has been acquired. These specimens were annually submitted by Sir Charles Phipps to the Prince, and a list of rewards, made contingent on attendance and attention, thus received their approval.

The list for 1861 is here given. It will be observed that the first prize in every instance is a Bible.

SHAW FARM EVENING CLASS, 1861.

A LIST OF PRIZES GIVEN TO THE MEN AND BOYS WHO ATTENDED THE SHAW FARM EVENING CLASS IN THE YEAR 1861, AS ALSO OF THE PRIZES PREVIOUSLY GIVEN TO THEM.

Names	Occupation	Awarded in 1856	Awarded in 1857	Awarded in 1858	Awarded in 1859	Awarded in 1860	Awarded in 1861
Joseph Eakland .	Carter . . .	Bible	'Gallery of Arts'	25s. .	25s. .	25s. .	25s.
Samuel Cripps .	Carter . . .	Bible	Pictorial Book .	25s. .	25s. .	25s. .	25s.
William Smith .	Engineer . . .			Bible	25s. .	25s. .	25s.
George Cousins .	Boy		Bible	12s. .		15s. .	25s.
James Smith . .	Carter . . .				Bible	20s. .	15s.
Daniel Littlewood .	Carter . . .					Bible	20s.
John Eakland . .	Stockman . .					Bible	25s.
Henry Young . .	Carter Boy . .				Bible	12s. .	15s.
James Franklin .	Shepherd Boy .				Bible	12s. .	15s.
Frederick Cripps .	Boy				Bible	12s. .	15s.
E. W. Smith . .	Boy						Bible
Joseph Smith . .	Boy						Bible
Charles Shurvall .	Carter . . .						Bible
William Brown .	Carter . . .						Bible
Thomas Falker . .	Cowman . . .						Bible
Charles Belcher .	Cowman . . .						Bible
William Davis . .	Cowman . . .						Bible
Henry Woodley .	Carter Boy . .						Bible
Thomas Wolford .	Shepherd Boy .						Bible
Henry Davis . .	Boy						Bible
Charles Spiers . .	Groom . . .						Bible

We do not pursue this subject further. It is reserved for another pen to give—perhaps for another generation to receive—the full record of the Prince Consort's services to national advancement through national education. Ours has been the

humbler office of pointing out, as in the history of his farms, so in that of his relations to his labourers and the labouring class around him, how much we owe to him as our great exemplar in the agricultural world. Both the owners and the occupiers of land may benefit by his labours and experience on the estates of Osborne and Balmoral, and on the farms round Windsor; but His Royal Highness was 'especially the friend of the people—the poor man's friend. Herein he well deserved a place in that class, the most eminent of all, and the least numerous—those who live in advance of their own time.' *

* Lord Brougham's inaugural address as President of the Social Science Congress, London, 1862.

CHAPTER IV.

BIOGRAPHICAL.

ALMOST immediately upon the arrival of H.R.H. the Prince Albert in this country, he interested himself in our agriculture. During the year 1840 he became a member of the Smithfield Club, which had been established in 1798 for the purpose of encouraging the improvement of our live stock, by offering prizes for the best fattened animals. His Royal Highness visited the Annual Show of the Smithfield Club in December of that year. It may illustrate his growing interest in agricultural pursuits, if we shortly enumerate the several steps in his career as an agriculturist, some of which have been the subject of the previous pages.

His Royal Highness had at once become the tenant of the Norfolk and the Flemish Farms, which, under General Wemyss, had remained in the hands of the Queen on the death of King William IV. From these farms accordingly the stock was sent which Prince Albert showed at the Annual Meetings of the Smithfield Club during the first years of his membership.

The Rangership of Windsor Park was early conferred upon His Royal Highness; and in that capacity he was for many years officially the director of the great work of agricultural improvement which has been there carried on. A great deal of shallow draining during the first few years was done under Sir W. Fremantle; but latterly, the superiority of deep draining upon the clayey pastures was thoroughly proved; and great improvements by top-dressing and depasturing, as well as by land drainage, were effected.

In November 1841 His Royal Highness was elected an honorary member of the Highland and Agricultural Society, the oldest of all our National Agricultural Societies, which had, indeed, been established nearly a century before, especially for the agricultural and social improvement of the Highlands of Scotland. The only other honorary member of this society is the Emperor of the French, who was elected in 1855 on the occasion of the great International Agricultural Show at Paris. The Prince Consort never exhibited stock at any of the Highland Society's Shows, and, as it happened, never attended any of their meetings. He had expressed a wish to be present in 1858, and the period of the meeting was altered to suit his convenience, but public affairs after all prevented him.

In 1843, His Royal Highness first became an exhibitor at the Annual Show of the Smithfield Club—showing two West Highland oxen, and a pen of three Suffolk-and-Bedfordshire pigs,

and receiving as his first agricultural distinction a 'high commendation' for the pigs, which had been bred at the Norfolk Farm. His Royal Highness was from this year a constant annual exhibitor at these meetings, showing every year pigs bred by himself at the Norfolk Farm, which were described on the records of the Club as of the Bedfordshire-and-Suffolk, or Bedfordshire-and-Yorkshire breeds; and West Highland, Hereford, and Short-horn oxen purchased for the farm and fattened there. In 1849 he first showed Devons, also bought elsewhere and fattened at the Norfolk Farm. In 1850, the Short-horn oxen exhibited by him are first described in the catalogues as bred by himself. In 1851, the pigs exhibited are described as of the Windsor breed. And from 1859 all the stock, Herefords, Devons, and Short-horns, were of the Prince's own breeding on the Shaw, Norfolk, and Flemish Farms respectively.

His Royal Highness visited the Show of the Smithfield Club, in company with the Queen and Royal Family in 1844 and 1850, with H.R.H. the Prince of Wales and H.R.H. the Prince Alfred in 1851, alone in 1859, and with the Queen in 1860. He had promised also to come and see the show in December 1861; but a few days before the meeting, Mr. Gibbs, the honorary secretary, received a letter from Sir Charles Phipps intimating that serious illness prevented him.

At all the meetings of this association after his election as a member, the Prince Consort was, as will be found stated

particularly in an appendix, a successful exhibitor of stock: no other member of the club was more assiduous in thus patronising the institution, or more successful in the competition which he thus assisted to excite. In the earlier years of his membership, when the plan was adopted of purchasing his stock from the best breeders and feeding them for exhibition on the Home Farms, his success was, of course, not a thing to be surprised at; but latterly, for many years, the stock exhibited had been bred as well as fed upon the Prince Consort's farms, and the prizes, then entirely to his credit, which were won by the home-bred cattle and pigs, remained as numerous as ever.

In December 1841, His Royal Highness became a Life Governor of the Royal Agricultural Society of England — a national society established in 1839, at the instance of Mr. Henry Handley of Lincolnshire, the late Earl Spencer, the late Duke of Richmond, and other noblemen and gentlemen. It was incorporated by Royal Charter in 1840, for purposes therein specified, all, more or less, tending to the improvement of English agriculture. The Prince attended three of the annual meetings of this society, was latterly a frequent exhibitor on these occasions, and ultimately accepted the Presidency of the Association.

In 1844, His Royal Highness became a subscriber to the Royal Agricultural Improvement Society of Ireland, an institution which had then been lately established, and whose objects are sufficiently indicated by its title. He was an exhibitor at the

first annual show of that society after his connection with it, and received a silver medal in the class of fat stock for a long-horned cow then exhibited by him. He was also awarded a gold medal at that meeting, in testimony of his attention to the interests of the Society.

The Royal Dublin Society, a corporate body, having similar objects in view, and supported partly by government grant and partly by the annual subscriptions of its members, was also patronised by the Prince. His Royal Highness was officially the vice-patron of the Society, and exhibited cattle in the fat classes of its show in 1845, receiving silver medals both for the best Durham or Short-horned ox; and for the best of all the fat oxen shown on that occasion. In 1846, the Prince again exhibited at the meeting of this society, receiving silver medals for a fat ox and fat heifer of the Short-horn breed.

In 1845, His Royal Highness became, with the Queen, the purchaser of the Osborne Estate in the Isle of Wight, to which, as well as to the Balmoral Estate, purchased in 1847, we have referred in the first chapter of this book in illustration of His Royal Highness' character as a landowner.

In 1848, the first of those public addresses, by which his character as a wise Prince, and benevolent and public-spirited man, became known to the country, was delivered. It was in behalf of the Society for Improving the Condition of the

Labouring Classes, and may thus be fitly placed upon the list of events in his agricultural career. This speech will be found fully reported in page 190.

About this time the Prince signified his interest in the promotion of agricultural improvement and education, by becoming the Patron of the Royal Agricultural College, which had been established at Cirencester, Gloucestershire, and for the institution of which a Royal Charter had been granted on March 27, 1845.

In July of the same year he visited the annual show-yard of the Royal Agricultural Society of England at York — walking round on the first day of the show, attended by the Earl of Yarborough the president, and the members of the council. A second visit to the show-yard was fixed on the second day of the meeting, the Prince rising at six o'clock in order to have a thorough and unimpeded examination of his stock. His Royal Highness honoured the annual dinner with his presence as the guest of the society in the evening. On that occasion His Royal Highness formally claimed his place in the ranks of English agriculturists, in an admirable speech, of which the following is a report:—

‘GENTLEMEN,—I have to thank you most sincerely for your
‘having drunk my health with so much cordiality. It has
‘been a great satisfaction to me to have been able this year
‘to pay you an old debt in appearing at this interesting and
‘useful meeting.

‘ All I have seen to-day exhibits a bright picture of the
‘ progress of British agriculture, and for much of this progress
‘ the country is indebted to this Society.

‘ Agriculture, which once was the main pursuit of this as
‘ of every other nation, holds even now, notwithstanding the
‘ developement of commerce and manufactures, a fundamental
‘ position in the realm; and although time has changed the
‘ position which the owner of the land, with his feudal depen-
‘ dents, held in the empire, the country gentleman with his
‘ wife and children, the country clergyman, the tenant, and the
‘ labourer, still form a great, and I hope united, family, in
‘ which we gladly recognise the foundation of our social state.

‘ Science and mechanical improvement have in these days
‘ changed the mere practice of cultivating the soil into an
‘ industrial pursuit, requiring capital, machinery, industry, and
‘ skill, and perseverance in the struggle of competition. This
‘ is another great change, but we must consider it a great
‘ progress, as it demands higher efforts and a higher intelligence.

‘ Conscious of these changes, we Agriculturists of England
‘ assemble together in this annual meeting of the Royal Agri-
‘ cultural Society in order to communicate to each other our
‘ various experiences, to exhibit the progress that some may
‘ have made in the applications of science, and others in the
‘ adaptation of machinery, or in the successful rearing of animals.

‘ Feeling, as I do, a great interest in these noble pursuits,
‘ and their paramount importance, and having myself experienced
‘ the pleasures and the little pangs attending them, I feel highly
‘ gratified that it should have been confided to me to propose

‘ to you the toast of the day, “ Success to the Royal Agricultural Society of England ;” and I trust you will heartily respond ‘ to it.’

The passage commencing ‘ We agriculturists of England,’ was received with immense enthusiasm by the large concourse of gentlemen to whom it was addressed, and the Prince was thus cordially welcomed to their ranks.

In 1849, His Royal Highness became the tenant of the Home and Shaw Farms, which had latterly been in the occupation of Mr. Cantrell, and of Mr. Watkins, formerly farm manager to H.R.H. the Princess Augusta, at Frogmore. We believe that to Major-General Wemyss, who acted for the Prince at the Norfolk and Flemish Farms, is due great part of the merit of advising the Prince to take these farms into his own hands and to build new offices and the dairy buildings there.

The General died in 1851, before the whole process of improvement was completed ; and Mr. Wilson the farm manager, along with Mr. Menzies, whose name has been already mentioned, finished the rearrangement of the farms. The former, instructed by the Prince, then commenced the improvement of the herd of Short horns ; his first step of real importance being the hiring of Booth’s bull, ‘ PRINCE ALFRED,’ and the purchase of the two Fawsley cows, to which reference has been already made. It was at this time, too, that thorough autumn cultivation was

adopted on these farms and those heavy top-dressings of the pastures with bones and salt, and sometimes guano, were commenced, which have been already mentioned in our account of the Shaw and Dairy Farms. General Wemyss' name must be mentioned here, as being the original agricultural adviser of the Prince—a position of which he felt the honour. During his last illness he frequently recurred to the improvements then in operation, and especially to the two homesteads on the Shaw and Dairy Farms then in progress, saying that his name would be connected with their history, as being what he had advised the Prince to do.

The personal interest taken by the Prince in these agricultural improvements was well illustrated both here during 1852—4, when the Dairy Homestead was erected, and some years later at the Flemish Farm, when the new Homestead was erected there.

His Royal Highness had acquired considerable experience in agricultural buildings upon the Osborne Estate, and he was also perfectly master of the practical details of farming operations. He thus entered keenly into the arrangements and details needed to make the plans for the new buildings convenient and suitable for the farm purposes; and it was greatly owing to the valuable suggestions he made, and to the care and practical intelligence he brought to bear on the subject, that the buildings have proved so successful, both as

regards convenience and for the economy of the labour involved in attending upon the stock.

In 1851 Mr. Turnbull received the Prince's commands to prepare plans for the new Homestead on the Dairy Farm, and after considerable discussion the site was at length fixed, where the buildings now stand, which is entirely above the highest known flood-level; and the subsoil being gravel is the best that can be adopted.

The Prince took great interest in arranging the plan and also in watching the progress of the building operations, and especially the adaptation of the various materials to their proper purposes. He was quite alive to the importance of having materials arranged to suit their purpose, so as to save manual labour, including such details as having the bricks made of the form required, so as to save labour and waste in cutting.

Similar interest was taken some years later in the new Homestead on the Flemish Farm. The old buildings there were for the most part wooden, and had long been in an extremely dilapidated condition. They were still standing during the earlier years of the Hereford herd, which has since been gradually growing into distinction; and strangers, when visiting the farm, were surprised to find such a fine herd so poorly lodged. The Prince Consort had long felt the want of better accommodation, and the increasing fame of the Hereford herd made it at length imperative that a new Homestead should be built.

Major-General Hood submitted to the Prince a statement of the extent of accommodation which the farm required, and prepared a sketch which, though not ultimately adopted, embodied the requirements of the farm, and assisted greatly to enable the Prince's decision upon the nature and extent of the buildings to be erected.

General Hood, accompanied by Mr. Turnbull, visited several of the best Homesteads in the country, for the purpose of examining into their merits, and observing the different methods adopted in the arrangements for the stock and machinery ; and in this manner also much valuable information was obtained.

The Prince was anxious that the stables, the covered yards for stock, and cow-stalls and feeding-boxes, should all be under one roof, so that the whole might be seen at one view, and so that the labour of attendance on them might be economised. But it was feared that the horses might be too much exposed when overheated by their work, and the stable was in consequence divided by a wall from the covered yards. It may, however, be questioned whether the Prince's idea of having the whole as it were in one large house was not the most proper to be adopted, even for the horses for whose sake the plan was altered.

At the time when Mr. Turnbull received the commands of His Royal Highness to prepare the plans for this Homestead, the Authorities of the Ordnance Department had adopted timber

buildings at the camp at Aldershot, and the Prince desired that the propriety of erecting the proposed buildings with timber might be well considered. A calculation of the comparative expense of timber and brick buildings, however, proved that the saving on the former would be very small, and the Prince at once decided upon adopting the more substantial material of brick. Being in the position of a tenant farmer in his occupation of the Flemish Farm, His Royal Highness was anxious both that the buildings should embrace every modern improvement that might be suitable for the farm, and that by their convenience of arrangement and plainness of finish, they should recommend themselves to farmers as a model to be copied. He specially directed that no ornamental work should be admitted.

These details are given in illustration of the good judgment and the particular interest which the Prince Consort brought to bear, as an agriculturist, upon questions connected with the management and improvement of his farms.

We must, however, now resume our enumeration of the events which followed one another in the course of his agricultural career. Among them may be named his public addresses in 1849, in behalf of the Servants' Provident and Benevolent Society, to which reference has been made elsewhere. In this year, too, the Prince gave his hearty and very efficient support to the establishment of an Annual Winter Cattle Show for central England, by the establishment of the Midland Counties'

Association for that purpose. His Royal Highness, though unable to attend the first meeting of the Society, sent down Major-General Wemyss, with a donation of 50*l.* to its funds, and with the assurance that his patronage was to be no mere formal matter, but a real and earnest assistance to the Society, to whose Exhibition he would annually send his stock for competition. A list of his stock exhibited at these shows, and of the success which they obtained, will be found in an Appendix.

In 1851 the annual meeting of the Royal Agricultural Society of England was held under the walls of Windsor Castle. The Prince personally bade them welcome, attending the show yards as an exhibitor, and with Her Majesty as an interested spectator.

His Royal Highness also attended the annual dinner held under the presidency of His Grace the Duke of Richmond, making the following speech in acknowledgment of a toast:—

‘MY LORD DUKE, MY LORDS AND GENTLEMEN, — I am very sensible of the honour which you have done me in proposing my health, and I can assure you, gentlemen, that the kind way in which you have responded to the toast will never be forgotten by me.

‘Some years have already elapsed since I last dined with you in this migratory pavilion; and I am glad that you should have pitched it this day under the Walls of Windsor Castle, and that I should myself have an opportunity of bidding you a hearty welcome in the Home Park.

‘ Your encampment singularly contrasts with that which
‘ *the barons of England, the feudal lords of the land, with*
‘ *their retainers, erected round Old Windsor Castle, on a similar*
‘ mead, though not exactly in the same locality. They came
‘ then clad in steel, with lance and war-horse. You appear
‘ in a more peaceful attire, and the animals you bring with
‘ you to the meeting are the tokens of your successful cultiva-
‘ tion of the arts of peace. King John came trembling
‘ amongst his subjects, unwillingly compelled to sign that great
‘ charter which has ever since been your birthright. Your
‘ Sovereign came confiding among her loyal and loving people ;
‘ she came to admire the results of their industry, and to
‘ encourage them to persevere in their exertions.

‘ And the gratification which the Queen has felt at the sight
‘ of your splendid collection, must, I am sure, be participated
‘ in by all who examine it. I am doubly pleased at this success,
‘ not only because it is witnessed by many visitors from foreign
‘ lands now within our shores, whom every Englishman must
‘ wish to inspire with respect for the state of British agriculture,
‘ but also because I feel, to a certain degree, personally res-
‘ ponsible for having deprived you of one, generally most inter-
‘ esting, feature of your show — I mean the field fruits, and
‘ the agricultural machines and implements. Though separated
‘ from your collection, they are seen to great advantage in
‘ another Royal park ; and you will be glad to hear that whatever
‘ the difficulty may be in deciding upon the superiority of the
‘ works of industry and art sent to the Crystal Palace by the
‘ different nations of the earth, the British agricultural imple-
‘ ments are acknowledged by common consent to stand there
‘ almost without a rival.

‘ Let me now use the privilege which your President has allowed me to enjoy, in proposing to you as a toast “Prosperity to the Royal Agricultural Society.” To its exhibitions, the means of comparison which they have afforded and the emulation which they have stimulated, we owe to a great extent the progress which British agriculture has made of late. To this Society belongs the honour of being one of the first to appreciate the value of such exhibitions, and to have, from the beginning, liberally and fearlessly admitted all competitors without restriction.

‘ I drink, “Prosperity to the Royal Agricultural Society.” ’

During this year, the first great International Exhibition, so magnificently successful in its crystal palace within Hyde Park, and owing not merely its success but its existence to the wisdom and public spirit of the Prince Consort, had received the agricultural show of implements which usually formed part of the English Agricultural Society’s annual exhibition ; and to this His Royal Highness alluded in the speech reported above.

To the live stock department of the show, which alone accordingly was held at Windsor, Prince Albert contributed a Short-horn in the class of two-years’-old bulls, and two Suffolk boars in the second and third of the pig classes.

Besides his patronage of National and Provincial agricultural societies, the local County Associations, whose districts bordered on Windsor were also supported by His Royal Highness, both as a subscriber to their funds, and as an active member competing for

their prizes. In 1851 the Prince won the silver cup presented by J. Palmer, Esq., to the Royal South Bucks Agricultural Society for the cultivation of the best five acres of common turnips. In 1853 he won a similar prize for Swedish turnips, given by Sir J. Easte, Bart., to the Royal East Berks Agricultural Association. In 1854, similar prizes offered by the same Society were again won by His Royal Highness: and in 1855, a silver cup for the best five acres of swedes and for the best three acres of mangold wurzels, offered by the South Bucks Society, were again carried off by the Prince Consort's farms.

In 1855 His Royal Highness was an exhibitor at the great International Cattle Show at Paris, carrying off the third prize for short-horn bulls with LORD FOPPINGTON (10437), bred by Mr. Fawkes of Farnley Hall, Otley, Yorkshire; and one of the prizes in the heifer class, with a short-horn heifer, *Sally*, by LORD FOPPINGTON, bred by His Royal Highness. A Devon heifer, *Bessy*, bred by Mr. Farthing, was also exhibited by the Prince; and an Ayrshire heifer, *Princess*, bred by Mr. Brown of Biggar. The Devon heifer carried off the first prize in her class, a gold medal and 28*l*. A pen of the Prince Albert's white Windsor pigs, under ten months old, were also exhibited, and received the second prize, in their class. Four pens of poultry, Brahma-Pootra, Hamburgh, and Dorkings, were also shown; the first named being successful.*

* It may be mentioned here that the prizes were left by him at the disposal of the French authorities, as a prize to be given on some won by the Prince Consort at the Paris show

In 1856, His Royal Highness, whose herds of Short-horns, Herefords, and Devons, were now in course of formation, again became an exhibitor at the Royal Agricultural Society's annual show, which took place that year at Chelmsford. He took the first prize (25*l.*) in the first class of Hereford bulls with 'BRECON,' bred by Mr. W. Mayberry; and the second prize (10*l.*) in the second class of Devon in-calf heifers with *Lobelia*, bred by Mr. George Turner. His Royal Highness also took the first prize (30*l.*) with the Clydesdale stallion, bred by Mr. Findlay of Easte Hill, Glasgow. A pen of Windsor pigs exhibited by him on the same occasion were commended.

In the following year (1857) the Emperor of the French became the guest of Her Majesty the Queen, both at Windsor Castle and at Osborne; and it may be given here as, however slight, yet a real illustration of the useful influence excited by the example of the Prince Consort, that the inspection by the Emperor of the farms at Windsor and at Barton led to the establishment of herds of Short-horn cattle and flocks of South-down sheep for the improvement of the live stock of France. The Emperor could appreciate the public spirit which prompted the high agricultural example exhibited both at Osborne and at Windsor; and seeing the utility of establishments of the kind.

future occasion of a similar kind. This prize— at Poissy (May 1862), and it was won by
'the Prince Consort's cup'—was accordingly Mr. M'Combie, of Tillyfour, N.B., with a polled
offered at the last International Fat Cattle Show Aberdeenshire ox, the best animal in the yard.

of a still more directly public character, he sought and obtained the assistance of the Prince in carrying out his wishes. Both Mr. Toward of Osborne, and Mr. Wilson the farm manager at Windsor, executed the Emperor's commissions; and the latter spent several thousand pounds in purchasing for His Majesty some thirty or forty cows of the Short-horn breed, selected from all the leading English herds, and a lot of Southdown sheep from the flock of the Duke of Richmond.

In the same year, the Prince again exhibited at the English Agricultural Society's show at Salisbury, receiving a second prize for a Devon heifer-calf and a high commendation for a Devon cow, *Verbena*. His Royal Highness paid a visit to this meeting—this being one of the three occasions on which His Royal Highness honoured the Society's exhibition with a visit.

The Prince Consort continued annually to exhibit at the annual meetings of the Royal Agricultural Society* from this time.

* It is proper to remark here that the corresponding society for the promotion of horticulture in like manner received most efficient assistance and support from the Prince Consort. Dr. Lindley thus speaks in the 'Gardener's Chronicle' of the relation in which His Royal Highness stood to the Royal Horticultural Society.

'To horticulture the illustrious Prince was the same zealous friend that he was to all that constitutes the grace of civilised life. The part which His Royal Highness has taken for some years in the progress of the Royal Horticultural Society is well known. It is no secret that the

revival of the Society was essentially his work, and that the acquisition of the new garden at South Kensington, a matter of vital importance, would never have been effected in the absence of his powerful support. What is not so well known is the large personal share that he took in its formation. With Prince Albert the Presidency was far from being a name and nothing more. He was frequently present at the meetings of councils and committees, guiding their deliberations, taking part in their discussions, and giving them the benefit of his acute understanding and admirable business habits. Nor was the attention of His Royal

The successive meetings at Chester, Warwick, Canterbury, and Leeds were witness to his interest in these annual contests, and generally also to his success. He was unusually successful at the last meeting (at Leeds), to which he sent breeding stock, receiving there two commendations for Herefords, a first, second, and third prize in the Devon classes, and a first and third prize in the horse classes. That he took great personal interest in the fortunes of the stock thus bred by himself, and exhibited in competition with his brother farmers, was illustrated by one of his last acts as tenant of the Shaw Farm — the directions which he gave to Mr. Tait to place the official card of award over the stalls occupied by the prize horses which had been sent to the Leeds Show. It was shown later still by the instructions given to Mr. Lythall, of Birmingham, Secretary of the Midland Counties' Association, holding its Annual Show of fat stock in Bingley Hall, to telegraph to Windsor Castle on the evening of the day when the prizes were awarded, in order that it might

Highness confined to general subjects; on the contrary, the Prince felt that the progress of great things is essentially controlled by minute and almost inappreciable arrangements, and to those he would devote his thoughts with that patient and sagacious industry which was among the distinguishing features of his character.

'It is no exaggeration to say that the garden at South Kensington was itself the conception of this great Prince, for, although aided by the counsels of such men as Fowke, Sidney Smirke, and Nesfield, not a line was drawn nor a point

determined on until it had received his approbation. So late as the sixth of the present month (December 1861) His Royal Highness had proposed to take the chair at a meeting of the council of the Royal Horticultural Society, and was only prevented coming from Windsor for the purpose by the approach of that fatal disorder which in a few hours deprived our gracious Sovereign of an affectionate consort and enlightened adviser, and ourselves of one of the wisest Princes that have watched over the interests of the British Empire.'

be known at the Royal dinner-table whether the stock sent from the Prince Consort's farms had been successful. That telegram announced the award to his stock of the first and second prizes in the class of Devon steers, and of two first prizes for fat pigs of the Windsor breed. A week later some of his stock was exhibited at the Baker Street Bazaar, where the Smithfield Club held their Annual Show, and proved again successful.

The illness from which the Prince was then suffering had by that time become known; and though no anxiety yet existed on his account, great regret was felt that His Royal Highness should have been prevented from carrying out his expressed intention of visiting this show.

It was during this the last year of his life, that His Royal Highness had graciously signified his acceptance of the office of President of the Royal Agricultural Society of England, of which he had been so long an active member. On June 5, 1861, the Earl Powis, then President, announced, to the great satisfaction of the agricultural public, that he was to be succeeded in his office by the Prince, during the year which was to culminate with the Great International Show to be held in Battersea Park, and when the second Great Exhibition was to be held at Kensington.

His Royal Highness presided at the first monthly meeting of the council of the Society during the year of his presidency, namely on July 31, 1861; and he again presided at the monthly

meeting of the council held on November 6 after the autumnal recess. On both occasions his kind and courteous demeanour, and his nice and ready appreciation of the points under discussion, proved his admirable fitness for the Presidency which he had accepted. His sound judgment on matters where island prejudices might have led the Society astray, was most usefully exercised. In particular, the arrangements to be made for the international character of the ensuing show at Battersea, owed much of their completeness to his guidance. It had been suggested that this department of the show was an application of the Society's funds to a purpose for which they had not been entrusted--- in fact, for the benefit not of the English agricultural public, but of the foreigner. His Royal Highness at once combated this assertion, on the ground that an outlay of the kind required would not only benefit ourselves, but would be amply repaid to the Society by the contributions of spectators.

The year of the Prince Consort's presidency, and especially the council meeting at which he presided for the last time, was also signalised by the abandonment of a somewhat exclusive rule, which had till then forbidden the presence of public reporters at the weekly meetings of the council for the discussion of agricultural subjects--- thus throwing open to general public discussion, and bringing into immediate usefulness, matters of fact and of opinion which would otherwise be either lost or locked up altogether, or left unpublished until the annual period of the Society's official publication.

An unusually large attendance of the members of the Society took place on Wednesday, December 11, when the half-yearly general meeting of the Society was appointed to be held, and when the Prince Consort would for the first time have met the general body of members in his official capacity. The Earl of Powis, the previous president of the Society, took the chair on that occasion, and expressed the great regret of the meeting at the absence of His Royal Highness, and at the indisposition, for this was all it was supposed to be, which had for the time disabled him.

The week had hardly closed, before all London was startled by the midnight boom of the Great Bell of St. Paul's which told of his decease.

The history of that most useful and distinguished Agricultural Career which then so abruptly and prematurely ended, is thus brought to its conclusion.

The writer who has been permitted to prepare it must not, however, lay down his pen without placing on record here his obligations to those gentlemen who have kindly given him their sanction and assistance. He offers his cordial thanks to Mr. Brebner, Mr. Tait, and Mr. Graham, the Prince Consort's

farm managers, for the information which has enabled him to describe the Windsor and the Bagshot Farms.

His best acknowledgements are due to Mr. Menzies, the deputy-surveyor of Windsor Park, for information on the history of the Park and Forest; and for the disinterested cordiality with which this assistance has been rendered to a stranger thus appropriating the fruits of much of his own field of literary labour.

He offers his cordial thanks to Mr. Toward over the Osborne estate, and to Dr. Robertson, commissioner over the Balmoral property, who have, as already acknowledged, so kindly given him their friendly assistance,—also to Mr. Mann of Osborne, and Mr. Turnbull of Windsor Castle, for the plans of cottages and farm-buildings which have been given in these pages.

His best thanks are also due to Major-Gen. F. H. Seymour, deputy-ranger of Windsor Park, to whom he owes the information that has been given of the Prince's relations to the various benevolent associations around Windsor—to Major-General the Hon. A. Nelson Hood, who directs the Prince Consort's Norfolk and Flemish Farms—and to Colonel the Hon. Sir Charles B. Phipps, K.C.B.—who have kindly permitted and facilitated his inquiries.

APPENDIX.

I

LIST OF CONIFEROUS TREES AT OSBORNE AND BARTON.

1862.

THE following list, with its references to the character of individual species, was referred to at page 19, and has been kindly drawn up by Mr. Toward of Osborne for publication here:—

Abies alba glauca.

- „ *excelsa*, Common Norway Spruce.
- „ „ *Finedonensis*, Finedon Hall Spruce.
- „ *Canadensis*, Hemlock Spruce.
- „ *Douglasii*, Douglas Fir A noble tree, attains 200 to 300 feet in height.
- „ *Kæmpferi*, Golden or Chinese Larch.
- „ *Menziesii*, Menzies' Spruce A tall growing tree, timber of excellent quality.
- „ *Pattoni*, Patton's Giant Californian Fir . . . This fir is said to attain 300 feet in height, 200 without branches, and is perfectly hardy.
- „ *Smithiana*, or *Morinda*, Indian Spruce . . . A superb and graceful tree, quite hardy.
- Araucaria Brasiliensis* Handsome, but rather tender.
- „ *imbricata*, Chili Pine, or Monkey Puzzle . . . Planted extensively in the woods by the sides of the drives.

Arthrotaxis — The Jointed Yew.

- „ *cupressoides*, or *imbricata*.

These are all highly ornamental. The name *Arbor Vitæ* (Tree of Life) is deduced from its China and Japan appellations. In Japan it is called 'Heba' (Tree of Life), and in China 'Hak' (Everlasting Life), on account of the plants being of a beautiful green at all seasons of the year.

- Biota Orientalis*, Chinese Arbor Vitæ
- „ „ *Sieboldii*, Siebold's
- „ „ *aurea*, Golden Arbor Vitæ
- „ „ *variegata*, Variegated golden
- „ *pendula*, Weeping Arbor Vitæ
- „ *monstrosa*, Monstrous Arbor Vitæ

- Cedrus Atlantica*, Mount Atlas Cedar More rapid in growth than common cedar, and quite hardy.

- Ced. Deodara, Indian Cedar In exposed situations they suffer by the
 „ „ viridis, Green Deodar { wind and sea breeze.
 „ „ robusta, Robust Deodar
 „ Libani, Cedar of Lebanon.
- Cephalotaxus Fortunei, Fortune's Cephalotaxus.
- Chamæcyparis sphæroïdea, White Cedar.
- Cryptomeria Japonica, Japan Cedar.
- „ nana.
- „ Lobbii.
- Cunninghamia sinensis, Chinese Cunninghamia.
- Cupressus excelsa, Tall Guatemala Cypress.
- „ funebris, Weeping, or Funereal, Cypress.
- „ Goveniana, Gowen's Californian Cypress.
- „ Knightiana, Mr. Knight's Cypress.
- „ Lawsoniana, Lawson's Cypress }
 „ Lusitanica, Cedar of Goa } Very ornamental and perfectly hardy.
 „ M'Nabiana, M'Nab's Cypress }
 „ macrocarpa, or Lambertiana One of the finest species. It attains a great
 size, is beautiful bright green, and will
 grow in almost any kind of soil, and in
 exposed situations.
- „ Nutkaensis, Nootka Sound Cypress A very handsome species.
- „ sempervirens, Upright Cypress.
- „ „ horizontalis.
- „ torulosa, Twisted, or Bhotan, Cypress.
- Fitz-Roya Patagonica.
- Juniperus communis, Common Juniper.
- „ Succica, Swedish Juniper.
- „ Bermudianna, Pencil Cedar.
- „ excelsa, Tall Juniper.
- „ Oxycedrus, Prickly Juniper.
- „ recurva, Weeping Indian Juniper.
- „ religiosa, Incense Juniper.
- „ Sabina, Common Savin.
- „ squamata, Scaly-leaved Nepal Juniper.
- „ thurifera, Spanish Juniper.
- „ Virginiana, Red Cedar.
- „ „ glauca.
- „ Chinensis, Chinese Juniper.

***Juniperus sphaerica*, Globular-fruited Juniper.**

” ” *glauca.*

„ **Schottii.**

„ **venusta.**

„ *Japonica variegata*.

Libocedrus Chilensis, Chilian Arbor Vitæ.

„ Doniana, Don's Arbor Vitæ.

***Picea bracteata*, Leafy-bracted Silver Fir.**

„ Cephalonica, Mount Enos Fir A fine tree — timber hard and durable.

„ nobilis, Noble Silver Fir A noble tree, grows 200 feet high, forming
vast forests in Northern California.

„ pectinata, Common Silver Fir.

„ Nordmanniana, Nordmann's Silver Fir . . . Beautiful tree, common on the Crimean mountains.

„ religiosa, Sacred Silver Fir.

„ amabilis, **Lovely Silver Fir** **A magnificent tree of Northern California.**

„ grandis, Great Silver Fir.

„ Pinsapo, Pinsapo Silver Fir Very handsome, with dense branches,
timber full of resin.

„ Webbiana, Captain Webb's Indian Silver Fir . Suffers from late frost in spring; cones of a rich purple colour.

Pinus Austriaca, Black Austrian Pine . . . Timber strong, stiff, and resinous, stands

the sea breeze and exposed situations.

„ Benthamiana, Bentham's Pine A noble tree, grows to 200 feet, Northern California.

„ *excelsa*, Lofty Bhotan Pine Timber white, soft, and remarkably compact.

„ Cembra, Swiss Stone Pine.

,, cembroïdes, Mexican Cembra-like Pine.

„ Gerardiana, Captain Gerard's Pine.

„ insignis, Remarkable Pine. . . . Very handsome, and of rapid growth.

„ Jeffreyi, Jeffrey's Pine Very distinct, and quite hardy.

„ Lambertiana, Lambert's Pine A gigantic tree from Northern California.

„ Laricio, Corsican Pine A lofty tree of rapid growth.

„ Llaveana, Llave's Pine.

„ Loudoniana, Loudon's Pine A noble tree, excellent in quality.

., *lophosperma*, Crested Seeded Pine.

„ *macrocarpa*, Dr. Coulter's Pine A large tree with spreading branches, from California.

• „ Montezumæ A Mexican tree.

Pinus Monte Allegri, Monte Allegro Pine.

- „ *muricata*, Bishop Pine.
- „ *patula*, Spreading-leaved Mexican Pine . . . A fine graceful tree.
- „ *ponderosa*, Heavy-wooded Pine . . . Timber heavy and excellent.
- „ *Pallasiana*, Taurian Pine.
- „ *Pinaster*, Cluster Pine . . . Grows freely exposed to the sea breeze.
- „ *Pinca*, Italian Stone Pine . . . A very ornamental round-headed low tree,
with leaves of a deep shining green.
- „ *Pyrenaica*, Pyrenean Pine.
- „ *radiata*, Radiated-coned Pine . . . Well adapted to plant by the sea coast.
- „ *rigida*, Stiff-leaved Pine.
- „ *Sabiniana*, Sabine's Pine . . . A beautiful and large growing tree from
Upper California.
- „ *Strobus*, Weymouth Pine.
- „ *sylvestris*, Scotch Fir Pine.
- „ *tuberculata*, Tuberculated-coned Pine.
- „ *Veitchi*, Buonaparte Pine.
- „ *verrucosa*, Warted-scaled Mexican Pine.

Podocarpus Andina, Andes Podocarpus.

- „ *variegata*.

*Salisburia adiantifolia, Maiden-Hair Tree.**Saxe-Gothaea conspicua, Prince Albert's Yew.**Sciadoptys verticillata, Umbrella Pine.**Sequoia sempervirens, Red Wood, or Bastard Cedar.**Taxodium distichum, Deciduous Cypress.*

- „ *sempervirens*.

Taxus adpressa, Flattened, or Creeping, Yew.

- „ *baccata*, Common Yew.
- „ „ *fructu-luteo*, Yellow-berried Yew.
- „ *fastigiata*, Irish Yew.

Thujaopsis dolabrata, Hatchet-leaved Arbor Vitæ.

- „ „ *variegata*.

Thuja gigantea, Gigantic Arbor Vitæ.

- „ *Occidentalis*, American Arbor Vitæ.
- „ „ *variegata*, American Variegated Arbor Vitæ.
- „ *plicata*, Nootka Sound Arbor Vitæ.

Torreya myristica, Californian Nutmeg.

- „ *nucifera*, Nut-bearing.

*Wellingtonia gigantea, Mammoth Pine.**Widdringtonia juniperoïdes.*

Besides Conifera, there are many other kinds of hardy evergreen trees and shrubs. Many of the choicest sorts grow and flourish in an extraordinary degree, owing, no doubt, to the extreme mildness of the climate. The grounds are particularly rich in the different species and varieties of the Holly, the Arbutus, and the Evergreen Oak. There are likewise many of the more rare and lately introduced kinds of shrubs and trees from Japan.

The Common and Portugal Laurel attain a very large size, also the Laurustinus and Sweet Bay Laurel. There are many fine specimens of the latter, 25 to 30 feet in height, dense, and thickly clothed to the ground. There are likewise several very fine standards with straight clean stems, and large handsome heads. Camellia, Myrtle, and Magnolia, grow, flourish, and flower in the open air. The Orange succeeds in favoured situations on the wall, with slight protection from severe frost.

II.

LIST OF ANIMALS EXHIBITED, AND OF PRIZES WON, BY H.R.H. THE PRINCE CONSORT, AT THE MEETINGS OF AGRICULTURAL SOCIETIES.

1843.

THE SMITHFIELD CLUB.

Two Scotch oxen.

One pen of 'Suffolk-and-Bedfordshire' pigs—
(highly commended).

1844.

THE SMITHFIELD CLUB.

One polled Angus ox, bred by Mr. Hugh Watson
of Keillor—(highly commended).One pen of 'Suffolk-and-Bedfordshire' pigs—the
prize (5*l.*).

ROYAL AGRICULTURAL SOCIETY OF IRELAND.

Fat cow—the prize (silver medal).

Also in acknowledgement of the Prince's
attention to the interests of the Society and
its show—(gold medal).

1845.

THE SMITHFIELD CLUB.

Short-horn ox, bred by Lord Huntingfield—third
prize (10*l.*).Two West Highland oxen—(one of them com-
mended).

Two pens of 'Suffolk-and-Bedfordshire' pigs.

ROYAL DUBLIN SOCIETY.

Fat ox—the prize (silver medal).

Fat ox—the prize (silver medal).

1846.

THE SMITHFIELD CLUB.

Hereford ox, bred by Mr. T. Roberts, near
Leominster—second prize (20*l.*).Hereford steer, bred by Mr. T. Roberts—first
prize (15*l.*).West Highland ox, bred by Mr. Campbell—
(commended).

Fat cow, cross-breed—(silver medal).

Two pens of 'Bedfordshire' pigs—second prize
(5*l.*)

ROYAL DUBLIN SOCIETY

Fat ox—(silver medal).

Fat heifer - (silver medal).

1847.

THE SMITHFIELD CLUB.

Hereford ox, bred by Mr. J. Stephen, Hay—(com-
mended).Hereford steer, bred by Mr. T. Roberts—(com-
mended).West Highland ox—the prize (10*l.*).Polled Scotch heifer, bred by Mr. G. Baxter,
Aberdeen.Short-horn cow, bred by Earl Brownlow—(com-
mended).

Pen of young 'Bedfordshire-and-Yorkshire' pigs.

Pen of older pigs—first prize (10*l.* and silver medal to H.R.H. as breeder).

Pen of old 'Bedfordshire-and-Yorkshire' pigs.

1848.

THE SMITHFIELD CLUB.

Hereford ox, bred by Mr. P. Davis, of Milton, Hereford—first prize (30*l.*).

Hereford steer, bred by Mr. T. Roberts.

West Highland ox.

Short-horn heifer, bred by H.R.H.

Short-horn ox, bred by Mr. Colvin, of Waltham Abbey.

Pen of cross-bred sheep.

Pen of 'Bedfordshire-and-Yorkshire' pigs.

Pen of older 'Bedfordshire-and-Yorkshire' pigs—second prize (5*l.*).

Pen of old 'Bedfordshire-and-Yorkshire' pigs—(highly commended).

1849.

THE SMITHFIELD CLUB.

Hereford steer, bred by Mr. Vaughan, of Chelmsbury—third prize (5*l.*).

Devon steer, bred by Mr. Quartly.

Short-horn cow, bred by Mr. Garne, Northleach.

Pen of 'Suffolk' pigs—third prize (5*l.*).

Pen of older 'Suffolk' pigs—second prize (5*l.*).

Suffolk pig—as 'extra stock.'

MIDLAND COUNTIES' ASSOCIATION.

Hereford steer, bred by Mr. Powell, Hereford.

Devon ox, bred by Mr. Quartly—first prize (10*l.*).

West Highland ox.

Short-horn cow, bred by Mr. Garne.

• Pen of eleven-months' old pigs.

1850.

THE SMITHFIELD CLUB.

Short-horn ox, bred by H.R.H.

Hereford ox, bred by Mr. G. Warwick, of Preston, Hereford.

West Highland ox.

Short-horn cow, bred by Mr. Garne—third prize (5*l.*).

Short-horn ox, bred by Mr. Lees, of Coleshill.

Pen of 'Yorkshire' pigs—second prize (5*l.*).

MIDLAND COUNTIES' ASSOCIATION.

Hereford ox, bred by Mr. T. Shirreff, Ludlow—second prize (5*l.*).

Short-horn ox, bred by Mr. Lees—first prize (10*l.*).

West Highland ox—(highly commended).

Pen of South Down sheep.

Pen of nine-months' old fat pigs.

1851.

ROYAL AGRICULTURAL SOCIETY AT WINDSOR.

Young short-horn bull, bred by H.R.H.

'Suffolk' boar, bred by Mr. Colvin, of Waltham Abbey.

'Suffolk' sow, bred by H.R.H.

THE SMITHFIELD CLUB.

Hereford ox, bred by Mr. Stedman, Ludlow—third prize (5*l.*).

Hereford steer, bred by Mr. T. Shirreff, Ludlow—third prize (5*l.*).

Hereford steer, bred by Mr. T. Shirreff—second prize (15*l.*).

Hereford ox, bred by Mr. E. Jones, Knighton.

West Highland ox.

Pen of West country Down sheep, bred by Mr. J. Paine, of Houghton.

Pen of 'Bedfordshire-and-Suffolk' pigs.

Pen of older 'Bedfordshire-and-Suffolk' pigs—second prize (5*l.*).

MIDLAND COUNTIES' ASSOCIATION.

Hereford ox, bred by Mr. Stedman, of Bedstone, —first prize (10*l.*), together with gold medal, and extra prize of 15*l.*

Short-horn ox, bred by Mr. Colvin.

West Highland ox.

Scotch fowls—(silver medal).

ROYAL SOUTH BUCKS' SOCIETY.

For five acres of turnips—(silver cup).

— — —

1852.

THE SMITHFIELD CLUB.

Devon steer, bred by Mr. T. Mogridge—(highly commended).

Hereford steer, bred by Mr. T. Roberts—first prize (25*l.*).

Hereford ox, bred by Mr. T. Shirreff.

Short-horn ox, bred by Mr. Colvin.

Short-horn cow, bred by Mr. W. Hollis, sen., Reading.

Polled Angus ox.

Pen of South Down wethers, bred by H.R.H.

Pen of West country Down wethers.

Pen of 'Suffolk' pigs.

Pen of older 'Suffolk' pigs, bred by H.R.H. —second prize (5*l.*).

MIDLAND COUNTIES' ASSOCIATION.

Hereford ox, bred by Mr. T. Shirreff.

Hereford steer, bred by Mr. T. Roberts—(highly commended).

Short-horn ox, bred by Mr. Field, near Romford —(commended).

West Highland ox.

Pen of South Down wethers, bred by H.R.H.

1853.

THE SMITHFIELD CLUB.

Devon steer, bred by Mr. T. Mogridge.

Devon ox, bred by Mr. J. Bird, of Taunton.

Hereford steer, bred by Mr. T. Shirreff.

Hereford ox, bred by Mr. T. Wayman, of Pur-slow Hall.

Pen of 'Suffolk' pigs—third prize (5*l.*).

Pen of older 'Suffolk' pigs, bred by H.R.H.—first prize (10*l.*), silver medal as breeder, and gold medal as best pigs in the yard.

MIDLAND COUNTIES' ASSOCIATION.

Hereford ox, bred by Mr. T. Wayman.

Pen of fat 'Suffolk' pigs, bred by H.R.H.—first prize (10*l.*) and silver medal as breeder.

ROYAL EAST BUCKS' SOCIETY.

For crop of Swedes—(silver cup).

1854.

THE SMITHFIELD CLUB.

Devon steer, bred by Mr. T. Mogridge—first prize (25*l.*).

Devon heifer, bred by Mr. G. Farthing—second prize (5*l.*).

Devon heifer, bred by Mr. R. Mogridge.

Pen of 'Windsor' pigs, bred from the stock of H.R.H., and Mr. Ambler.

Pen of older 'Windsor' pigs.

Pen of older 'Windsor' pigs, shown as extra stock—(silver medal).

MIDLAND COUNTIES' ASSOCIATION.

Hereford steer, bred by Mr. Boulton, of Dilwyn
—first prize (10*l.*).

Devon steer, bred by Mr. G. Turner, Exeter
—first prize (10*l.*).

Devon heifer, bred by Mr. Farthing—first prize
(10*l.*).

Pen of breeding pigs—first prize (10*l.*).

Pen of older fat pigs.

Pen of eleven-months' old fat pigs—first prize
(10*l.*).

Pen of twenty-one months' old fat pigs.

ROYAL EAST BERKS SOCIETY.

For green crops (two silver cups).

1855.

THE PARIS INTERNATIONAL SHOW.

Short-horn bull, LORD FERRINGTON, 10437, bred
by Mr. Fawkes—third prize (20*l.*).

Short-horn heifer, *Sally*—third prize, and bronze
medal (16*l.*).

Devon heifer, bred by Mr. Farthing—first prize
(28*l.*) and gold medal.

Ayrshire heifer, bred by Mr. Brown, of Biggar.

Windsor boar—second prize (7*l.*) and silver medal.

Three pens of poultry—(3*l.*) and bronze medal.

THE SMITHFIELD CLUB.

Devon steer, bred by Mr. Turner—second prize
(10*l.*).

Devon ox, bred by Mr. R. Mogridge—third prize
(10*l.*).

Devon cow, bred by Lord Portman—first prize
(20*l.*).

Hereford ox, bred by Mr. J. Stephen of Hay—
second prize (10*l.*).

Short-horn ox, bred by Mr. S. Marjoribanks.

Short-horn heifer, bred by H.R.H.

Short-horn cow, bred by Captain Dilke, R.N.

West Highland ox.

Galloway heifer.

Devon ox, bred by Lord Portman.

Pen of young Windsor pigs—second prize (5*l.*).

Pen of older Windsor pigs—first prize (10*l.*) and
medal.

Pen of older Windsor pigs.

Pen of sixteen months' old Windsor pigs.

MIDLAND COUNTIES' ASSOCIATION.

Hereford ox, bred by Mr. Powell.

Short-horn ox, bred by H.R.H.—second prize
(5*l.*).

Devon ox, bred by Mr. Corner, of Torweston—
first prize (10*l.*).

Devon steer, bred by Mr. W. Lyddon, of King's
Brompton—second prize (5*l.*).

Devon steer, bred by Mr. G. Turner.

Devon cow, bred by Mr. Farthing—second prize
(5*l.*).

Devon cow, bred by Mr. T. Miller—first prize
(10*l.*).

Polled Angus ox.

Pen of fat pigs, thirteen months old.

Pen of fat pigs, seventeen months old.

Pen of fat pigs, three years and forty weeks old.

Pen of Windsor pigs—(highly commended).

ROYAL SOUTH BUCKS' SOCIETY.

Best five acres of turnips—(silver cup).

Best three acres of mangold wurzel—(silver cup).

1856.

ROYAL AGRICULTURAL SOCIETY AT
CHELMSFORD.

Hereford bull, BRECON, bred by Mr. W. Mayberry.

Hereford heifer, *Hedgehog*, bred by Earl Radnor.

Hereford heifer, *Vienna*, bred by Earl Radnor.
 Devon bull, *Zouave*, bred by Mr. G. Turner
 —first prize (25*l.*).
 Devon heifer, *Lobelina*, bred by Mr. G. Turner
 —second prize (10*l.*).
 Devon heifer, *Rose*, bred by Earl of Aylesford.
 Devon yearling heifer, *Gentianella*, bred by Mr.
 G. Turner.

Pen of Windsor pigs—(commended).
 Clydesdale stallion, bred by Mr. Findlay — first
 prize (30*l.*).
 Two Clydesdale fillies, bred by Mr. W. Menzies,
 Kincardine.

THE SMITHFIELD CLUB.

Devon steer, bred by Mr. Quartly—second prize
 (10*l.*).
 Devon ox, bred by Mr. G. Turner —(highly com-
 mended).
 Devon cow, bred by Mr. W. Farthing — second
 prize (10*l.*).
 Hereford steer, bred by Mr. E. Price, Pembridge.
 Short-horn ox, bred by H.R.H.
 Short-horn heifer, bred by H.R.H.—second prize
 (5*l.*).
 Pen of Windsor pigs—(highly commended).
 Pen of older Windsor pigs.
 Pen of Berkshire pigs.

MIDLAND COUNTIES' ASSOCIATION.

Hereford steer, bred by Mr. E. Price — (highly
 commended).
 Hereford ox, bred by Mr. E. Price—(commended).
 Devon ox, bred by Mr. G. Turner — first prize
 (10*l.*).
 Devon ox, bred by Mr. W. Lyddon.
 Devon steer, bred by Mr. G. Turner — (com-
 mended).
 Devon steer, bred by Mr. J. Quartly — second
 prize (5*l.*).

Pen of fat pigs — first prize (10*l.*).
 Three other pens of fat pigs.
 Pen of breeding pigs — first prize (10*l.*).
 Samples of globe mangold wurzel—(commended).
 Samples of Gibbs' purple top Swedish turnips.

1857.

ROYAL AGRICULTURAL SOCIETY AT SALISBURY.

Hereford bull calf, *Windsor*, bred by H.R.H.
 Devon cow, *Verbena*, bred by Mr. G. Turner
 — (highly commended).
 Devon bull calf, *Prince Arthur*, bred by H.R.H.
 — second prize (5*l.*).
 Devon bull calf, *Grand Duke*, bred by H.R.H.

THE SMITHFIELD CLUB.

Devon steer, bred by Mr. G. Turner — second
 prize (10*l.*).
 Devon ox, bred by Mr. W. Farthing.
 Devon heifer, bred by Mr. J. Hole — first prize
 (15*l.*).
 Hereford ox, bred by Mr. E. Price — second prize
 (10*l.*).
 Hereford ox, bred by Mr. E. Price.
 Devon steer, bred by Mr. J. Tapp, of South Mol-
 ton, shown as extra stock — (silver medal).
 Five pens of Windsor pigs.

MIDLAND COUNTIES' ASSOCIATION.

Hereford steer, bred by Mr. E. Price — (com-
 mended).
 Devon steer, bred by Mr. R. Mogridge — second
 prize (5*l.*).
 Devon heifer, bred by Mr. J. Hole, of Dunster—
 first prize (10*l.*).
 Four pens of Windsor pigs—first prize (10*l.*).
 silver medal, and commended.
 Sample of long mangold wurzel.

1858.

ROYAL AGRICULTURAL SOCIETY AT CHESTER.

Devon bull, *ZOUAVE*, bred by H.R.H. — first prize (15*l.*).

Devon yearling bull, *PRINCE ARTHUR*, bred by H.R.H. — (highly commended).

Devon bull calf, *COLONEL*, bred by H.R.H. — second prize (5*l.*).

Clydesdale stallion.

Clydesdale filly — (commended).

THE SMITHFIELD CLUB.

Devon steer, bred by Mr. R. Mogridge — first prize (25*l.*).

Devon ox, bred by Mr. G. Turner — first prize (25*l.*).

Hereford steer, bred by Mr. W. Mayberry.

Hereford ox, bred by Mr. E. Price — (commended).

Four pens of Windsor pigs — one of them receiving second prize (5*l.*).

MIDLAND COUNTIES' ASSOCIATION

Hereford ox, bred by Mr. Price.

Hereford steer, bred by Mr. T. Edwards — second prize (5*l.*).

Devon ox, bred by Mr. G. Turner.

Devon ox, bred by Mr. R. Corner — second prize (5*l.*).

Devon ox, bred by Mr. G. Turner — first prize (10*l.*); and extra prize of 20*l.*

Four pens of Windsor pigs.

1859.

ROYAL AGRICULTURAL SOCIETY AT WARWICK.

Hereford bull, *WINDSON*, bred by H.R.H. — (commended).

Hereford bull calf, *MAXIMUS*, bred by H.R.H. — first prize (10*l.*).

Hereford yearling heifer, *Medea*, bred by H.R.H.

Hereford yearling heifer, *Venus*, bred by H.R.H.

Devon bull, *PRINCE ARTHUR*, bred by H.R.H.

Devon yearling bull, *COLONEL*, bred by H.R.H. — second prize (15*l.*).

Devon bull calf, *SARACEN*, bred by H.R.H.

Devon heifer, *Gardenia*, bred by H.R.H.

Devon heifer, *Lobelina*, bred by H.R.H. — second prize (10*l.*).

Alderney bull, bred by Sir J. Cathcart — (commended).

Windsor boar — first prize (10*l.*).

Pen of three Windsor sows — first prize (10*l.*).

Sow, bred by Mr. Pain, of Salisbury.

Clydesdale filly — second prize (10*l.*).

THE SMITHFIELD CLUB.

Devon steer, bred by Mr. P. Halse, of Molton

Devon steer, bred by H.R.H. — second prize (10*l.*).

Hereford ox, bred by Mr. T. Edwards, Leominster.

Short-horn heifer, bred by H.R.H.

Hereford ox (extra stock), bred by Mr. T. Edwards.

Four pens of Windsor pigs, one of which received the first prize (10*l.*, silver medal to breeder, and gold medal for the best pigs in the yard).

MIDLAND COUNTIES' ASSOCIATION

Hereford ox, bred by Mr. T. Edwards.

Short-horn heifer, bred by H.R.H.

Devon ox, bred by Mr. R. Corner.

Devon ox, bred by H.R.H.

Devon ox, bred by Mr. R. Mogridge — first prize (20*l.*).

Three pens of Windsor pigs — (one of which was commended).

Sample of Standish's purple-top swedes.

1860.

ROYAL AGRICULTURAL SOCIETY AT
CANTERBURY.

Short-horn bull, *COUNSELLOR*, bred by H.R.H.
 Short-horn bull calf, *SIR CHARLES*, bred by H.R.H.
 Hereford bull, *MAXIMUS*, bred by H.R.H.
 Hereford heifer calf, *Clio*, bred by H.R.H.
 Hereford heifer calf, *Helena*, bred by H.R.H.
 Devon bull, *MURAT*, bred by H.R.H.
 Devon heifer, *Lobelia*, bred by H.R.H.
 Two pens of Windsor pigs.
 Two Clydesdale stallions, bred by H.R.H.

THE SMITHFIELD CLUB.

Devon ox, bred by H.R.H.
 Devon heifer, *Lobelia*, bred by H.R.H.—(highly
 commended).
 Hereford ox, bred by H.R.H.
 Four pens of Windsor pigs—one of which re-
 ceived the first prize (10*l.* and silver medal).

MIDLAND COUNTIES' ASSOCIATION.

Devon steer, bred by H.R.H.—first prize (10*l.*
 and silver medal).
 Devon heifer, bred by H.R.H.—first prize (10*l.*
 and silver medal).
 Three pens of Windsor pigs.

ROYAL AGRICULTURAL IMPROVEMENT
SOCIETY AT CORK.

Silver medal, as the breeder of the prize boar.

1861.

ROYAL AGRICULTURAL SOCIETY AT LEEDS.

Short-horn bull, *COUNSELLOR*, bred by H.R.H.
 Hereford bull calf, *VICTOR*, bred by H.R.H.

Hereford bull calf, *AJAX*, bred by H.R.H.—
 (commended).
 Hereford yearling heifer, *Dido*, bred by H.R.H.—
 (commended).
 Hereford yearling heifer, *Hebe*, bred by H.R.H.
 Devon bull, *COLONEL*, bred by H.R.H.—third
 prize (5*l.*).
 Devon bull calf, *CROWN PRINCE*, bred by H.R.H.
 -second prize (5*l.*).
 Devon cow, *Her*, bred by H.R.H.—first prize
 (20*l.*).
 Windsor boar, bred by H.R.H.
 Windsor sow, bred by H.R.H.
 Clydesdale mare—third prize (5*l.*).
 Two Clydesdale fillies—first prize (15*l.*).

THE SMITHFIELD CLUB.

Devon ox, bred by H.R.H.—third prize (5*l.*).
 Devon cow, *Her*, bred by H.R.H.—(highly com-
 mended).
 Hereford steer, bred by H.R.H.—third prize (10*l.*).
 Short-horn cow, bred by H.R.H.—third prize (5*l.*).
 Devon ox, bred by H.R.H., extra stock
 Four pens of Windsor pigs—(one of which was
 commended).

MIDLAND COUNTIES' ASSOCIATION.

Hereford steer, bred by H.R.H.—(commended).
 Short-horn cow, bred by H.R.H.
 Devon steer, bred by H.R.H.—first prize (10*l.*,
 silver medal, and extra prize of 20*l.*).
 Devon steer, bred by H.R.H.—second prize (5*l.*).
 Devon cow, bred by H.R.H.
 Three pens of Windsor pigs—one of which received
 first prize (10*l.*, silver medal for breeder, and
 silver cup for the best pen of fat pigs in the
 yard), and another received first prize in its
 class (10*l.*, and silver medal to the breeder).

The list thus enumerated includes prizes to the amount of nearly 1,000*l.* in money, five gold medals, six silver cups, twenty-one silver medals, two bronze medals, thirteen high commendations, and twenty-one simple commendations.

We add the following list of stock bred by His Royal Highness, and sent to the Agricultural Shows from the Prince Consort's farms in 1862 :-

ROYAL AGRICULTURAL SOCIETY AT
BATTERSEA.

Short-horn bull calf, ROYAL PRINCE, bred by H.R.H.	Clydesdale stallion, SIR CHARLES, bred by H.R.H.
Short-horn in-calf heifer, <i>Gertrude</i> , bred by H.R.H.	Windsor boar, bred by H.R.H.
Two short-horn yearling heifers, <i>Lady Constance</i> and <i>Norma</i> , bred by H.R.H.	Windsor breeding sow, bred by H.R.H.
Short-horn heifer calf, <i>Rosetta</i> , bred by H.R.H.	Pen of Windsor breeding sows, bred by H.R.H.
Hereford bull, MAXIMUS, bred by H.R.H.—first prize (30 <i>l.</i>).	—(highly commended).
Hereford yearling bull, GARIBALDI, bred by H.R.H.	THE SMITHFIELD CLUB.
Hereford yearling bull, AJAX, bred by H.R.H.	Devon steer, bred by H.R.H.—third prize (10 <i>l.</i>).
Hereford bull calf, NESTOR, bred by H.R.H.	Hereford steer, bred by H.R.H.—first prize (30 <i>l.</i> and silver medal).
Hereford cow, <i>Victoria</i> , bred by H.R.H.	Hereford ox, bred by H.R.H.
Hereford in-calf heifer, <i>Hebe</i> , bred by H.R.H.	Hereford cow, bred by H.R.H.
Hereford yearling heifer, <i>Ada</i> , bred by H.R.H.—first prize (15 <i>l.</i>).	Shropshire heifer, bred by H.R.H.
Hereford yearly heifer, <i>Princess Alice</i> , bred by H.R.H.	Pen of nine months' old Windsor pigs—second prize (10 <i>l.</i>).
Hereford heifer calf, <i>Princess Beatrice</i> , bred by H.R.H.	Pen of fourteen months' old Windsor pigs—second prize (10 <i>l.</i>).
Devon bull, COLONEL, bred by H.R.H.—(highly commended).	Windsor pig, shown as extra stock.
Devon yearling bull, CROWN PRINCE, bred by H.R.H.—first prize (25 <i>l.</i>).	MIDLAND COUNTIES' ASSOCIATION.
Devon bull calf, PRINCE ALFRED, bred by H.R.H.—first prize (15 <i>l.</i>).	Hereford steer, bred by H.R.H.—third prize (5 <i>l.</i>).
Two Devon yearling heifers, <i>Fuchsia</i> and <i>Honey-suckle</i> , bred by H.R.H.	Hereford steer, bred by H.R.H.
	Short-horn heifer, bred by H.R.H.
	Devon steer, bred by H.R.H.—second prize (10 <i>l.</i>).
	Devon steer, bred by H.R.H.
	Pen of fat pigs, under ten months old, second prize (10 <i>l.</i>).
	Two pens of fat pigs, under fifteen months old—first prize (10 <i>l.</i>).
	Pen of breeding pigs, under six months old.

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